July 21, 1950

BRITISH DENTAL JOURNAL

The Journal of the British Dental Association

(Incorporating the "Mouth Mirror" and the "Dental Gazette")

First and Third Fridays in each month

Price to non-members - 2s. per copy. Postage 3d. Annual Subscription £2 2s. post free

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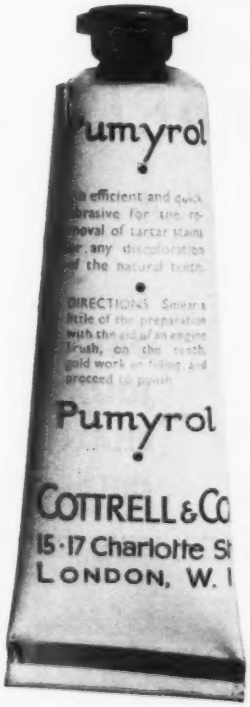

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President of the British Dental Association, 1950–51.

BRITISH DENTAL JOURNAL

The Journal of the British Dental Association

VOL. LXXXIX JULY 21, 1950 No. 2

ORIGINAL COMMUNICATIONS

PRESIDENTIAL ADDRESS[1]

BY H. T. ROPER-HALL, M.D.S., M.B., CH.B., F.D.S., M.R.C.S.ENG., L.R.C.P.LOND.

FOR the first time for nearly sixty years a President addresses a meeting of one Association representing the whole profession, and you may well imagine how proud I am to have the honour of occupying the Chair at the first Annual Meeting of our united Association.

I deeply appreciate this honour which you have conferred upon me and I assure you that I shall do everything in my power during my year of office to uphold the honour and dignity of the Association and to endeavour to follow, however humbly, in the steps of those great men who have preceded me.

As you know I have fought for unity for many years and it is a great personal pleasure to me to know that we are now one Association going forward with high aims to a worthy future.

The day-to-day adjustments of headquarters and branches will rapidly be accomplished and our attention can be devoted to the task which confronts us. This will test our capacities to the full, since it embraces the dental care of the *whole population*, not treatment alone, but the wider conception of education and guidance on diet, hygiene and prevention.

If we as a profession are not capable of fully performing our task, then we must find the remedy, we cannot evade the responsibility. It is our task and we must see that the work is done.

When in 1921 we accepted the advantages of a " closed " profession, we at the same time undertook a great responsibility, the full and complete care of the dental needs of the people of Great Britain, but economic stress often intervened, and it is only now, when treatment is freed from individual payment, that the real need is making itself known and the demands upon our services proving an impossible burden.

The situation has become chaotic and these worrying facts are exercising the minds of our most able men.

THE PRESSING NEED OF THE CHILDREN

The unwisdom of Ministers in implementing a premature scheme for the whole population, in spite of our advice to treat the priority classes first, is now demonstrated, and insistence upon *treatment* instead of upon *education* and *prevention* is not helpful to a public uneducated in dental health.

The Press could be more helpful, there has not been enough Press comment upon the dire needs of the children and other priority classes. But let there be any error, however slight, on the part of one of our profession and the Press at once takes notice. Admittedly one or two of our members have erred, but the great majority have continued, as always, to give of their best.

As a profession we must accept some of the responsibility for the present chaos. There has been a general acceptance of patients beyond the scope of immediate treatment, a tendency on the part of some dentists to treat adults and ignore the more pressing needs of the children, so essential to their present well-being and for the future of the Nation.

One excuse for Ministerial and professional error is that there was no statistical evidence of " need " and " demand."

We had known that the " need " was great—recruitment in both Wars had shown an appalling state of dental apathy and neglect, which was well illustrated in the dental hospitals and the general hospital " out-patients " departments. (An example of the need is shown by the fact that The Royal Army Dental Corps in five years of war filled 15,000,000 teeth.) " Demand," however, was a personal problem of the pros-

[1] Delivered at the Annual General Meeting of the British Dental Association, Birmingham, Tuesday, July 11, 1950.

pective patient and some of the present increased demand is no doubt a tribute to the excellent work carried out in the Forces and in the school clinics by so many of our colleagues. This shows that when dentistry is demonstrated to the patient personally, and in the most suitable way, by chairside treatment and education, dental consciousness is aroused and the patient appreciates and seeks regular dental care.

This illustrates the precipitancy of the present Government policy of approving a " breakdown " service for adults and neglecting the most important, the future adult. Care of the children and expectant and nursing mothers is the profession's main aim and we must use every endeavour to keep this essential matter in the forefront professionally and ministerially.

In 1938 and 1939 the School Dental Service was growing rapidly with a real plan of development and recruitment.

The war halted this and now there is very little prospect of improvement unless there is a real change of heart on the part of the Ministries.

If they will invite the co-operation of the Association in some of the problems now facing them they will obtain advice and assistance based upon long practical experience of dentistry. Such consultation would be of inestimable value.

Parliament and the people must realise that dental care is not a matter of political expediency or manœuvre but an essential contribution to the health of the Nation. The priorities *must come first*.

Whatever our views of clinics in general may be, we know that for children's dentistry in particular they fit in very well. They are a part of school life and encourage a spirit of emulation in the children. Head teachers and their staffs are interested and help the scheme along. Many of our members find a real " vocation " in this work and are excellent in handling young people with friendly understanding. Contrary to present policy, this branch of the profession should be encouraged and well remunerated by the Government.

The Means to Meet the Need

It is not my desire to stress finance, but the recent cuts in remuneration in the General Dental Service tend to discourage the best type of man from giving of his best. Surely the Ministry can devise some simple means of curtailing excessive earnings without causing thousands of conscientious men to suffer. It should be recognised that many dentists are working under very high pressure in the Scheme because of the great demand for their services. This demand emphasises our need for more recruits to the profession. Because of the amount of work to be done, newly qualified dentists find themselves in the General Dental Service within a few days of qualification—forced into the hurly-burly of over-filled appointment books and the rush and tear of this type of practice—totally unlike the older methods of quietly and slowly learning the handling of patients, the cares of a well-run practice, and some of the more advanced methods of their craft. Patients suffer from this relative inexperience and hurry. Valuable time which could be at their service is wasted in form-filling, and unfortunately, such is the stress, much of what our graduates have learnt is denied to their patients because of the enormous demand for extraction and replacement. Thus vocationally-minded people are being spoiled and their ideals destroyed. They are not encouraged to give of their best but are driven like machines.

It is said that about 20,000 complete upper and lower dentures are authorised every week, which works out at approximately 1,000,000 a year. This cannot continue and there must be a swing in the reverse direction very soon.

It is obvious that the present number of dentists is completely insufficient for our task, and there is little hope that numbers will increase rapidly during the next few years. The Teviot Report says that to raise our number even in twenty years to what is required will need an entry of 900 students per annum.

An increase of numbers is urgently needed—we are all aware of the ominous fact that more than half of us are over 55 years of age, and we and the Government must do all we can to encourage the right type of students to enter our schools.

This emphasises the need for consideration of our present curriculum and its value to the public and profession. It is complete and yet sufficiently flexible to permit of adding new subjects and dropping others as need arises.

This system produces a highly qualified dentist adequately trained in the basic sciences, which are essential for a full appreciation of the underlying causes of dental conditions and the rationale of treatment, together with a sufficient knowledge of general medicine and surgery to permit of full consultation with our medical colleagues on allied problems of general health.

At the same time the hand and eye are fully trained in the complex technical procedures which constitute the art and craft of dentistry.

The length of this course of training has raised the question whether such a complete

curriculum and the amount of knowledge acquired are really necessary, or whether a much simpler course will suffice ; could the curriculum be halved, less attention be given to basic sciences, and the fullest time be devoted to the development of technical skill and manual dexterity—in other words, is a three-year L.D.S. curriculum feasible ?

As the guardians of the public we must consider very seriously whether it is wise to reduce the curriculum so drastically because of today's need for increased dental personnel. The needs of the public will surely be better served by giving the best possible training to the student, taking advantage of all new knowledge and research, keeping him abreast of the times, and generally maintaining and improving the full curriculum.

Ancillaries

This awareness of the shortages in our numbers and the increasing need for our services has forced discussion of the value of ancillary workers. Dental technicians and chairside attendants are already fully accepted and valuable aids in our work—but on all sides are heard suggestions that in addition we should employ other workers whose duties shall bring them much more closely into the field of advice and treatment, in other words that they shall take over some of the work which we ourselves are now doing, such as the school dental nurses used in New Zealand, the prosthetist to assist in the denture problem or hygienists who will help in preparing mouths for operation, preserving the gums and teeth in a healthy state, and by lecture and demonstration improve present dental health education.

The school dental nurse is a success in New Zealand, but that does not mean that the same scheme can be introduced here with the same success. In New Zealand it has grown so gradually for nearly thirty years that it is now accepted fully by public and profession alike.

To introduce, suddenly, so revolutionary a scheme here, may rouse apprehension in the public mind and will certainly exercise that of our profession, but such a service may prove to be essential and we must face facts.

A report on the New Zealand Dental Nurses Scheme may shortly be published, and it will then be possible to discuss the matter fully in its bearings upon dentistry in this country.

The dental prosthetist has not yet been tried, so far as I am aware, but because a man is an expert in the craft of making dentures it does not necessarily follow that he will have equal success in performing the essential mouth operations which dentures necessitate.

The oral hygienist in her limited field is successful in America.

Before considering such drastic innovations the Government must give careful consideration to relative costs.

The present system with highly trained and skilled dentists may well be more economical in the long run than one staffed largely by partly-trained ancillaries who will need proper supervision, for which the fully qualified dentist must take full responsibility. This is only right for the ancillary worker, and essential for the public. Such supervision to be effective must be immediate. If, in a desire to save expense and valuable personnel, the supervision is not immediate then undesirable things are likely to happen. Someone must accept full responsibility for the patient, and it is impossible for anyone to undertake full clinical responsibility without adequate training in the basic and ancillary sciences.

The Teviot Report recognised many of these difficulties and recommended that such an innovation should await proof of a shortage of dentists to work a comprehensive dental service.

If we are to carry out our task to the full we must consider these suggestions, suggestions so revolutionary in their implications that they must be brought out into the open and discussed freely. It is our duty to advise what is best for the public and then, with all our might, press our decisions upon the Government, and not wait until we have some scheme, possibly not the wisest one, thrust upon us. I must emphasise that I am not advocating the encouragement of ancillary workers ; I am calling your attention to the fact that unless we find another solution we may have to accept them. The work must be done.

If some new method, new in Great Britain, is to be tried, let it be tried out fully in one area of the country. There is danger of failure if a new and ambitious scheme for the whole country is introduced without adequate preparation and personnel.

Whatever may be decided eventually by the Government the profession must be consulted.

If ancillaries are necessary let us have a say in the matter. We are the people who will have to train and supervise them and accept ultimate responsibility. If they are not necessary let us say so in no uncertain voice—but in any event we must produce a scheme which will enable us to carry out our task. If the work is being done, and being done well, no Government will insist upon the employment of partly trained dental workers.

The Representative Board of the B.D.A. has

already created a special committee to work out a long-term plan for the treatment of the priority classes. They may well be able to offer some constructive suggestions which will solve these other problems.

Prevention

Having faced these dangers plainly we may now look a little further afield to see if the future holds any hope in the prevention and cure of dental disease.

Research in America indicates that fluorine added to the community drinking water or applied topically will reduce the incidence of caries in children.

Research in Great Britain is also being vigorously pursued, and results will soon be known.

In addition to fluorine therapy other preventive methods are being investigated. Diet is under consideration, and research into the pathology and treatment of caries by new methods is steadily advancing. All this is most heartening and must be fully considered. So let us persuade the Government to carry out their duty to look after the priority classes first, including improvement and augmentation of our well-proved and accepted School Dental Service, leaving the older patients to seek their own dentistry, with due regard to the aged and needy. Research and the normal increment of our numbers may then solve the problem, and the promised reduction of caries by fluorine and other methods in a few years' time give us the opportunity of starting a new dental scheme with the caries problem well in hand and the future adult in a fair state of dental health. Then as a profession we can fully undertake our task, the dental care of the whole nation, and work out our own scheme—a task not only for our dental statesmen, but for every member of the profession.

Leaders and ordinary members alike must devote time and thought to this and give a lead by treating the children. With such a positive plan before us we can advance to a higher professional status, and the bright prospect of real service to the nation will encourage the best type of entrant, men and women with a vocation, a vision, a desire to do the best for the dental welfare of the people.

Progress itself demands changes in ideas and outlook, and, as far back as 1872, the *Dental Cosmos* said :

> " To refuse to see that great changes are at hand as concerns the standing and practice of the dental profession is simply to close one's eyes. Of no one thing are we more fully assured than that the dentistry of today must either advance or give place to some new system ; to attempt to confine it to its present limits is to seek to control that progress which is itself evolution."

We realise that some changes are necessary now, let us decide the essentials ; the dental health of our people must be improved and maintained.

Ours is an essential profession, it is capable of becoming a great and noble one, playing its true part in the well-being of the Nation.

The great men who founded our Association had a " vision," an ideal of service—Let us rise and carry on the great traditions and ideals of our Founders and raise dentistry to its true dignity.

VALEDICTORY ADDRESS[1]

By J. M. MACRAE, F.D.S. R.C.S.Eng., L.D.S.Leeds

Another Presidential year has run its course and in a few minutes it will be my duty to install my successor, but before doing so, I would like to give a brief retrospect of the year just ending.

The usual Presidential visits to the Branches were fulfilled and I wish to express my sincere thanks for the many kindnesses shown to my wife and myself by branch officials and members.

Two unusual functions happened during the year which are worthy of note, one being the unveiling of the Memorial Tablet at Hill Street commemorating the names of those members of the Association who fell in the Second World War ; the other was the presentation, to Mr. Bryan J. Wood, of his portrait, from his many friends and admirers in the Association, as an expression of their keen appreciation of all he had done for the B.D.A. as a Branch Secretary, Treasurer of the Association, Chairman of the Council, President of the Association and Editor of the *British Dental Journal*. Truly a wonderful record of service !

The year will be memorable from the fact that the amalgamation of The British Dental Association, The Incorporated Dental Society, and the Public Dental Service Association was accomplished ; and this with such unanimity that the success of the new and larger body is assured. Certain difficulties of reorganisation are being smoothed out by goodwill and an earnest desire to have a strong and efficient Association which will be truly representative of the dental profession.

As time goes on the benefits of the fusion will

[1] Delivered at the Annual General Meeting of the British Dental Association, Birmingham, Tuesday, July 11, 1950.

become more apparent but members must not expect that because amalgamation has been achieved all their troubles are over ; far from it, for the membership itself must still offer strong and united resistance to limitation of clinical freedom and arbitrary reduction of remuneration which would bring the latter to a level not commensurate with the importance of our contribution to the improvement of the national health. Amalgamation has certainly strengthened our position to offer opposition to what we consider unjust conditions, but only the loyalty and determination of the membership can obtain the removal of these unjust conditions.

The recent cut in payments announced by the Minister of Health would have been larger but for opposition put up by your representatives to this latest unfair reduction ; unfair in this respect, that a dentist, who is doing good work and keeping near to Spens formula, is more hardly hit than are the men who are earning the alleged high figures given in a hostile Press. Had the Minister put forward a "cut" governed by a sliding scale which left earnings below an agreed figure as they were, and imposed the "cut" on the higher gross takings, making the "cut" larger as the gross increased, the intense resentment of the profession would have been much lessened.

Settlement of remuneration by negotiation has been given a setback, and the mistrust aroused by the Minister's unilateral action, taken while negotiations were actually proceeding, will not be easily dispelled. Mr. Bevan prejudiced the whole situation by his action in announcing that he had decided to make an overall 10 per cent reduction. Faced with a "fait accompli," your representatives withdrew from the conference, thus preventing the Minister making the claim that the reduction was agreed to by negotiation.

The numerical strength of the personnel of the School Dental Service has not increased during the year under review. It has actually deteriorated. Squadron-Leader Cooper, in opening the debate on this subject in the House of Commons, said that the Service was being slowly paralysed and had now reached the breaking-down stage. Some eight speakers took part in the debate and all admitted the difficulty of solving the problem. Hansard, May 8, pages 106–127, makes very interesting reading, for some of the suggestions made in the House were stressed a year ago at the Annual Meeting at Scarborough. The Parliamentary Secretary to the Ministry of Education in winding up the debate declared: "We are not prepared to allow this service to decline any further. We shall do our best to meet the situation and meet it urgently." This statement sounds so definite that one can assume that the authorities have a plan to counter this decline.

Is there any connection between Ministerial intentions and the report of the Committee which investigated the School Dental Service of New Zealand ? Do the Ministries of Health and Education deem the time ripe to augment our School Service by grafting on to our present system the New Zealand scheme which seems to be carried out very efficiently by dental nurses specially trained to perform minor dental operations ?

The British Dental Association should take this possibility into account and be prepared to examine very carefully all the implications of any such dilution.

That the scheme seems to work successfully in New Zealand does not necessarily imply that a similar project would be a success, or even be desirable, in this country where conditions are not quite the same. New Zealand never had a school dental service staffed entirely for all types of dental work by fully trained dental surgeons and it was lack of this service which led to the formation of the present system.

In this country there has been a service staffed entirely by fully trained dental surgeons, which, although reduced, is still functioning. Therefore the need for England to adopt the New Zealand scheme is neither apparent nor urgent. Further, with the demands of business and the professions, particularly of nursing, for employable young women at its present height, it may well be asked, will there be a surplus left to staff such a service ?

Whitley Council machinery, now accepted as the medium for settling the remuneration of public dental officers, may prove of great value if the recommendations of the Council lead to the re-establishment of the School Service to its former strength and the attraction of new entrants to its ranks. In that case there would be no need to consider the "pros" and "cons" of the New Zealand method.

Should the situation arise it will be watched with vigilance, it being borne in mind that the dental welfare of the children is of greater importance than considerations of political or professional expediency.

Ladies and gentlemen, the time has now come when I have the honour of installing as your President a man whose many good qualities, personal and professional, make him a worthy occupant of this high office.

A STUDY OF SOME OF THE DEVELOPMENTAL, STRUCTURAL AND PATHOLOGICAL ASPECTS OF TUBULAR HYPOPLASIA IN HUMAN ENAMEL

By J. J. HODSON, B.D.S.Sheff., L.D.S.Edin.
Department of Oral Pathology, Sheffield University

PART II

(*Continued from p.* 13.)

T-HYPOPLASIA is most commonly found in molar teeth, especially in the regions of the anatomical grooves. The tubes are, however, also found elsewhere within the enamel substance. There is some evidence that their presence in unusual situations may account for carious lesions in hitherto unexplained sites. For example fig. 21 shows an isolated tube on the summit of a cusp of a premolar. A number of these has been found. In the one illustrated the structure has "ballooned" somewhat. Fig. 22 illustrates similar areas on the occlusal surface of a premolar. Many premolars have a labio-lingual groove at the mesial and distal ends of the central groove. This groove frequently ends in a shallow pit but sometimes a deep penetrating tubular structure is found. Fig. 23 shows a ground section of such a case which was treated with the formic methyl alcohol solution to preserve the organic matrix. The very delicate matrix moved, however, whilst photographing the specimen. The invaginated area is well shown outside the central groove area and penetrating almost to the dentinal surface. Fig. 24 shows a tubular structure on the labial edge of an upper central incisor. The base is seen to be bifurcated.

FIG. 22.—Hypoplastic tubes on the occlusal surface of a premolar. Stained gentian violet—mounted in gelatine. × 42. E.C. = Enamel capsule. D. = Dentine. H.T. = Hypoplastic tube.

FIG. 21.—Hypoplastic tube on the summit of a cusp of a premolar. Stained eosin—mounted in gelatine. × 40. D. = Dentine.

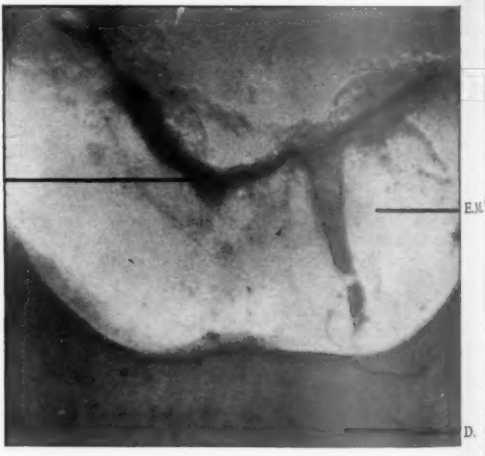

FIG. 23.—Decalcified ground section (formic-methyl alcohol) of an upper premolar showing hypoplastic invagination. Unstained—photographed in celloidin-benzoate. × 22. G. = Central groove. E.M. = Enamel matrix. D = Dentine.

What is the relation between abnormally shaped teeth and the occurrence of T-hypoplasia? Unfortunately it has not been possible to obtain any quantity of abnormal teeth in order to form an opinion on this question. The impression is obtained that third molars show a greater incidence of tubular hypoplasia than do other teeth. The only case examined of a more primitive type of third molar is that shown in figs. 25 and 26. This trituberculate molar was found to have one straight simple type hypoplastic tube as shown in the micro-dissection preparation. It is not known whether the dark spot on the right cusp indicated the area. It seems most likely. A complicated tissue was found in the inter-cuspal grooves which was not investigated.

The contents of the invaginated areas vary from enamel epithelium in developing germs, squamous cells in early erupted specimens, to necrotic bacteria-laden contents in the adult enamel. Sometimes, however, they are filled with more interesting contents as shown in fig. 27. Here besides the bacterial debris there are clearly shown yeast cells and a number of amœbæ.

One of the most interesting studies of T-hypoplasia is the relation between the tubes and the enamel lamellæ. The enamel lamellæ

FIG. 24.—Hypoplastic tube bifurcated at base in situ in upper central incisor. Unstained—mounted in gelatine. × 36. E.C. = Enamel capsule. D. = Dentine.

FIG. 25.—Abnormal upper third molar with root excised. × 5.

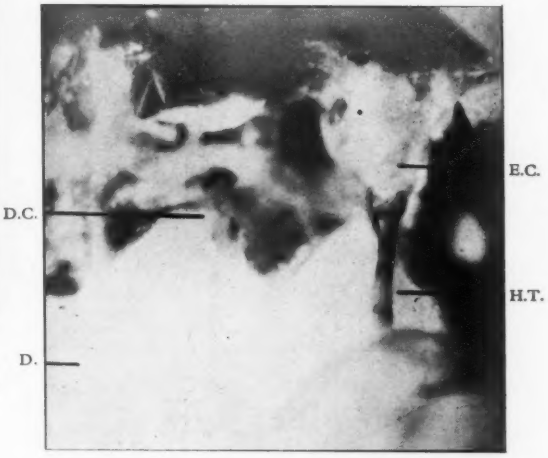

FIG. 26.—Micro-dissection preparation of specimen in fig. 25—unstained—mounted in gelatine. × 56. D.C. = Dental cusp. D. = Dentine. E.C. = Enamel capsule. H.T. = Hypoplastic tube.

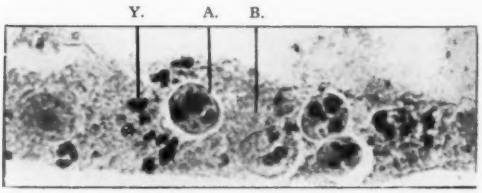

FIG. 27.—Contents of a hypoplastic tube. Orifice of tube on left. Y. = Yeast cells. A. = Amœbæ. B. = Bacterial debris.

generally will be more fully discussed in a later communication. Here it is only proposed to mention them in their relation to the hypoplastic tubes (*see also* Hodson, 1949*b*). As already mentioned (Hodson, 1949*a*) the lamella-tube combination is frequently found and usually most marked in the groove areas, i.e. in groove areas in which hypoplastic tubes are found. The simplest type is shown in fig. 28 where a short lamella proceeds from the tube base to the amelo-dentinal junction. The substance of the lamella is in direct continuity with the contents of the tube.

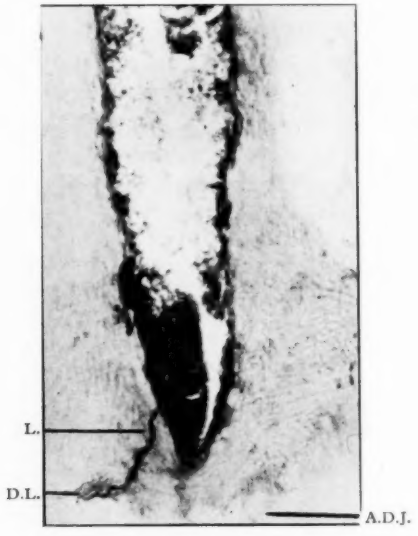

FIG. 28.—Longitudinal section of an isolated hypoplastic tube with lamella running from its base. Stained hæmatoxylin and eosin. × 248. Note the smallness of this tube compared to those in other illustrations. L. = Lamella. D.L. = Dentinal end of lamella. A.D.J. = Amelo-dentinal junction.

The lamella-tube combination throws considerable light on the whole question of the development and structure of the enamel lamellæ. Stated briefly it can be said that the histological picture gives the appearance of the formation of a hypoplastic tube by the broadening out of the larger types of the organic lamellar tracts. Fig. 29 shows the base of a bifurcated tube. The two areas are connected by a lamella. Serial sections show that this lamellar tract increased in width until the two tubes became one. Here again the substance of the lamella was in direct continuity with the contents of the tubes. As is found on the surface of the enamel the enamel capsule did not bridge the gap but entered and took part in the formation of the lamella. Fig. 30 shows a ground section of the base of a tubular area with lamellæ

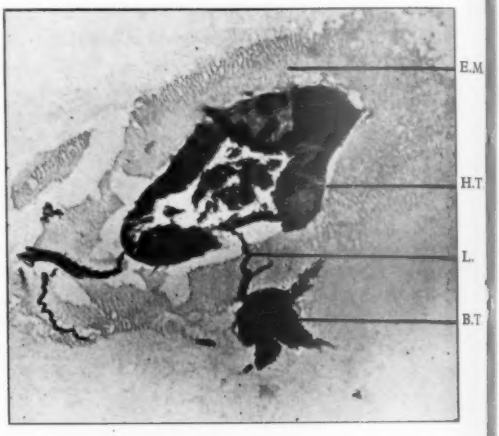

FIG. 29.—Transverse section toward the base of a bifurcated tube. Stained hæmatoxylin and eosin. × 120. E.M. = Enamel matrix. H.T. = Hypoplastic tube. L. = Lamella. B.T. = Bifurcated part of the tube.

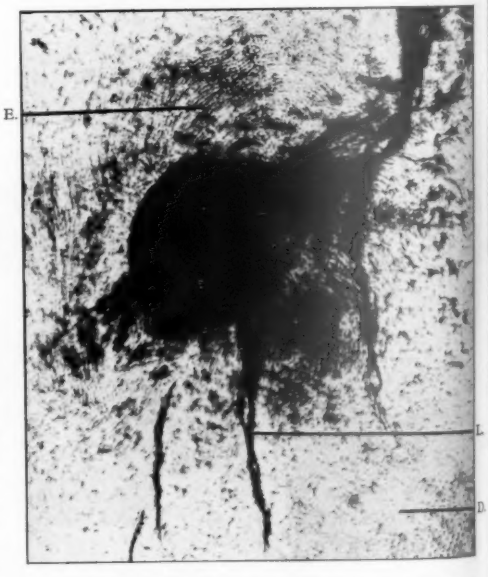

FIG. 30.—Tranverse ground section of a hypoplastic tube—unstained. × 116. L. = Lamella. E. = Enamel substance. D. = Dentine.

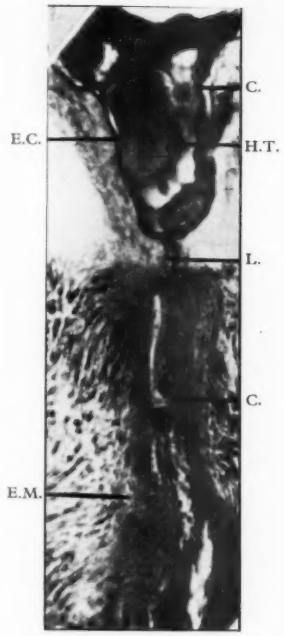

FIG. 31.—Transverse section of tube in unerupted tooth showing continuity with lamella and epithelial contents. Stained Heidenhain and eosin. × 455. E.C. = Enamel capsule. C. = Epithelial cells in lamellar tract and tube. H.T. = Hypoplastic tube. L. = Lamella. E.M. = Enamel matrix.

FIG. 32.—Longtitudinal section before entering a tubular structure from a groove in an upper molar from an elderly person. Stained hæmatoxylin and eosin. × 144. L. = Lamella. D.L. = Dentinal end of lamella. A.D.J. = Amelo-dentinal junction.

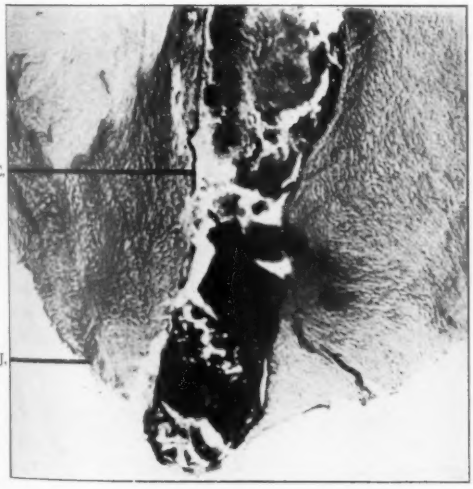

FIG. 33.—From the same specimen as in fig. 32 showing the area of greatest penetration. Stained hæmatoxylin and eosin. × 144. E.C. = Enamel capsule. A.D.J. = Amelo-dentinal junction.

FIG. 34.—From the same specimen as in fig. 32, showing the exit area of the tube. Stained hæmatoxylin and eosin. × 144. L. = Lamella. A.D.J. = Amelo-dentinal junction.

proceeding from it. In young specimens epithelial cells from the tubular structures present can be traced into the lamellar area as shown in fig. 31.

The lamella-tube relation can not only be traced as above in transverse sections but also in longitudinal sections. Figs. 32–34 illustrate the longitudinal aspect. This specimen was dissected from an elderly person affected with parodontal disease. It was the only tube in the groove and joined the groove in a very narrow neck. This case also completes the histological picture presented in this paper of these structures in ground sections, in developing enamel matrix and in fully erupted adult enamel. Fig. 32 shows the entrance to the tubular defect. Fig. 33 is the photograph of a section at its greatest depth and fig. 34 shows the exit of the tube in a similar lamellar form as existed in fig. 32. (Fig. 8, Hodson, 1949*a*, is from the same specimen.)

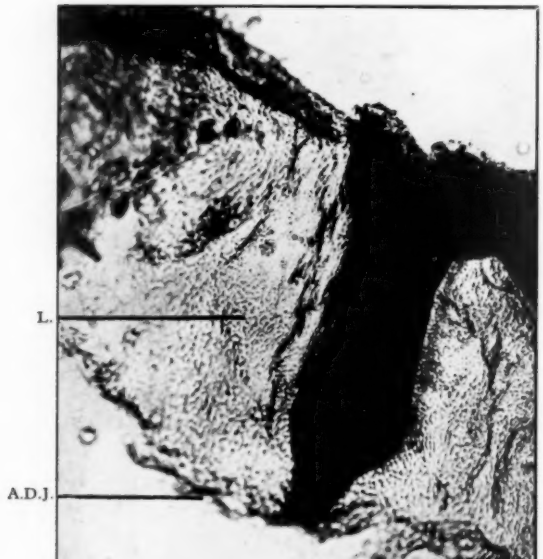

FIG. 35.—View of part of a distal fissure dissected from an upper molar. Stained eosin, embedded in gelatine. × 85. L. = Lamella. A.D.J. = Amelo-dentinal junction.

The gross appearance of such an area can be seen in a rather more complicated form in fig. 35. This is a magnified view of part of a complete fissure removed from the posterior groove of an adult upper molar. There were four tubular structures joined together by lamellar tissue. Histological section showed the lamella to be of classical appearance.

In the approximal areas where lamellæ are generally more numerous only one or two tubular structures have been found. They were of the flattened type. In one case the base of the approximal tube joined the base of another tube on the occlusal surface.

The depth of the tube in fig. 33 calls for comment. Here the enamel capsule is actually in direct contact with the amelo-dentinal membrane, there being no intervening enamel substance at all. Kronfeld (1935) in a large survey of enamel "fissures" never observed a single case in which the "fissure" reached to the dentinal surface. In the developmental specimen shown in fig. 3 although the tube is deep there is a small amount of matrix between the base and the dentinal surface.

SUMMARY

Further evidence is presented of the existence of a hypoplastic defect in the enamel to which the term tubular hypoplasia has been given.

The hypoplastic tube defects are developmentally similar but differently shaped and deeper versions of the M- and G-hypoplasias. They are considered to be of greater importance in their relation to the incidence of caries. All three types are manifestations of arrested amelogenesis and are often associated with defective matrix formation.

Substantial evidence is given of the occurrence of defects in the anatomical grooves.

The gross appearances of the defects in both usual and unusual situations have been described.

The histology of tubular hypoplasia has been described and illustrated in ground sections, in developing enamel matrix and in fully erupted adult enamel.

A study of the gross and histological appearances gives the impression that the hypoplastic tube is a broadening out or opening of the larger types of the organic lamellæ.

ACKNOWLEDGMENTS

The author would like to thank Professor G. L. Roberts for reading the manuscript and Mr. M. Rudland for his industry on the technical side.

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AN INVESTIGATION INTO THE REMOVAL OF THE FOUR FIRST PERMANENT MOLARS

By J. HUTCHISON GLEN, L.D.S.Eng.

While the controversy over the results of the removal of the four six-year-old molars was raging in the dental Press in 1940–41, the children in the care of the writer's former employing authority began to return from their first evacuation. Many had lived in country districts and had received little dental treatment during their stay; in consequence the six-year molars were often unsavable. It was thought that such a state of affairs might profitably be used as the material of a controlled investigation, the purpose of which would be to remove the four six-year molars and observe the results obtained under the following headings:

(1) Variations in the incidence of caries.

(2) The tilting, rotation and spacing of adjacent teeth with the resultant loss of occlusal contacts.

(3) The effect on the vertical height (overbite) and parodontal condition.

(4) Lastly, and perhaps most naïvely, to determine by clinical signs, a stage of development in the arches, when these teeth could be removed with consistently good results. This was necessary if the policy of their removal was to be recommended as a result of the findings of the investigation, because the conditions for successful treatment advocated by A. A. Wilkinson are impractical for the majority of children seen in school clinics, few of whom retain all of their deciduous teeth until the age of 8 years.

The investigation was started with 109 children, of both sexes, aged between 9½ and 10½ years of age. Unfortunately for one reason or another this number became reduced to 77 children, five-and-a-half to six years afterwards when the variation in the incidence of caries was worked out and compared with the incidence of caries figure in an equal number of children of the same age who had not lost their first permanent molars. The 15½ and 16 years of age-group was chosen for the final evaluation of the incidence of caries figures, not only because it allowed a reasonable period of time to elapse during which the teeth might decay, but also because the school population in that age-group is relatively small, in consequence the choice of an identical number of children as a control, or alternatively, the examination of all children of that age was made much easier and less selective. The first permanent molar teeth were not included in the evaluation of the incidence of caries in the children of the control group.

The children in the experimental group were examined annually, those of the control group were examined and the results added when the final evaluations were made.

Children whose clinic record cards gave an incomplete dental history were not included in the control group.

(1) *The Caries Incidence Figures.*—The method of assessing the extent of the decay present in the teeth was the one described by Mellanby *et al.*, in 1936. "Tempryte" probes Nos. 17 and 11 were used.

The evaluation of the caries data was done by the system of "score points" suggested by Whyte from whose article the phrases "Average Caries figures" (A.C.F.) and "Total Caries figures" (T.C.F.) have been obtained. The only alteration that was made to his procedure was that all the fully erupted teeth present at the time of the evaluation were included in the investigation, and not only those which were in complete maxillomandibular occlusion. This was thought to be necessary because the oral conditions relative to the partial loss of occlusion in the experimental group had been artificially created, and were in themselves part of the subject of the investigation.

The method of grading caries which had been fully described by Whyte and others was:

		Symbol	*Points*
Grade O	No caries	C_0	0
Grade I	Initial caries	C_1	1
Grade II	Medium caries	C_2	2
Grade III	Extensive caries	C_3	3

The summation of the points ascribed to each tooth is taken as the total of the mouth, and, divided by the total number of teeth in the mouth, will give an "average caries figure" (A.C.F.) which can be used for comparison with the A.C.F. of the children in the control group. Conservation work done after the extraction of the first permanent molars of the children in the experimental group, and that done in the control group after the age of 9½ years, was graded as carious cavities and included in the compilation of the A.C.F.

The A.C.F. of each group is shown in Table I.

These results apparently confirm the statements of those who have insisted that a reduction in the incidence of decay follows the extraction of the first permanent molars.

The difference between the two A.C.F. is so marked that a further analysis of the figures was made in order to determine, if possible,

TABLE I.—AVERAGE CARIES FIGURES OF EXPERIMENTAL AND CONTROL GROUPS

	Experimental group. Four first permanent molars removed	*Control group. First permanent molars retained*
No. of cases	77	77
Points	461	1,117
No. of teeth	1,848	1,846
Average caries figure ...	0·25	0·60

in which segment of the arch the greatest reduction had taken place, and whether it had occurred in the coronal fissures or approximal surfaces of the teeth (Table II).

TABLE II.—DISTRIBUTION OF CARIES IN EXPERIMENTAL AND CONTROL GROUPS

	Experimental group A.C.F.	*Control group A.C.F.*
Segment $\frac{3-1 \mid 1-3}{3-1 \mid 1-3}$	0·029	0·39
Segment $\frac{7-4 \mid 4-7}{7-4 \mid 4-7}$	0·22	0·21
Coronal caries	0·15	0·21
Approximal caries	0·10	0·39

The table shows, as might be expected, that the imbricated incisors of the control group yielded a large number of approximal cavities.

(2) *Tilting and Rotation.*—The tilting, rotation and spacing of the adjacent teeth, with the loss of occlusal contact were assessed visually and radiographically. As no instruments were available for accurate measurements, no record was kept of the possible loss of anteroposterior length of the alveolus.

(*a*) Loss of occlusal contact: The method employed in the evaluation of the loss of occlusal surfaces, and arriving at an "average occlusal figure" for each group, was similar to the one employed for the evaluation of the incidence of caries. The occlusion was assessed by visualising the teeth diagrammatically in one plane as consisting of a buccal surface which was made up of two or more planes arranged as triangles, which would interdigitate with those of the opponent teeth in the opposite jaw. In this manner the premolars were considered to have two occlusal planes and the molars four. "Points" were awarded so that a summation of the mouth could be made.

The grading of occlusion was done as follows:

		Symbol	*Points*
Grade I	All occlusal planes complete in contact with the opposing teeth	O_0	1
Grade II	One occlusal plane lost	O_1	2
Grade III	Two occlusal planes lost	O_2	3
Grade IV	Three or more occlusal planes lost	O_3	4

An example of the method would be that an instanding second premolar would represent the loss of two occlusal planes. A rotated premolar might be said to have lost one or two planes according to the degree of rotation.

If somewhat primitive, this method did provide a means of comparing the degree of occlusion in both groups of children. The "average" occlusal figure was arrived at by dividing the total number of "points" awarded in each mouth by the total number of the "cheek" teeth examined. The canine teeth were not included as "cheek" teeth, in consequence, the first mandibular premolar was considered to have one occlusal plane. In the summation the first permanent molars were included in the number of teeth examined in the control group. Unfortunately a dynamometer was not available to compare the occlusal force, but Friel has stated that he had found that a substantial reduction in efficiency follows the removal of the first permanent molar.

The comparative figures are given in Table III.

TABLE III.—AVERAGE OCCLUSAL FIGURES OF EXPERIMENTAL AND CONTROL GROUPS

	Experimental group	*Control group*
No. of cases	77	77
Points	171	188
No. of teeth	924	1,234
Average occlusal figure (A.O.F.) ...	0·185	0·152

(*b*) Observations on the findings: in the control group, the loss of occlusal surfaces was largely due to the displacement of the cheek teeth from the arch through the lack of anteroposterior alveolar length. The displacement of the second premolar sometimes allowed the first permanent molar to tilt slightly and rotate, with further loss of occlusal surfaces. Altogether 121 cheek teeth were displaced, representing 0·1 per cent of the teeth examined. In addition 47 upper and lower canine teeth were displaced buccally, approximately 0·18 per cent of the total number of canine teeth examined.

Imbrication of the upper incisors, which may or may not have been due to the encroachment of the cheek teeth into the incisal segment, occurred in 0·07 per cent of incisors inspected.

In the experimental group, the chief cause of the loss of occlusal surfaces was the tilting of the second permanent molar and the rotation of the second premolar. Only one case of buccal impaction of the upper canines was seen. Imbrication of the upper incisors occurred in 0·012 per cent of the incisors inspected. This was substantially less than those found in the control group. It is often stated that the tilting of the second mandibular molar is caused by that tooth falling forward into the socket of

the first permanent molar. But a similar condition is not met with in the maxilla to the same degree. It appeared that there were at least two other possible causes of the condition. It was found that in those cases where the tilting was very great (in one case the mandibular tooth was at about 80 degrees to the occlusal plane) the deciduous molars had been extracted early in life and the first permanent molar was removed while the second molar was but only slightly erupted. This large space allowed the tongue to bulge over the alveolus, literally holding down the mesial cusps of the second molar and depressing the crown backwards, allowing the interproximal spacing of the cheek teeth to become very marked. Where the tilting was of lesser degree, the cause may have been the extraction of the first permanent molar which had altered the sequence or timing of the eruption and movement into occlusion of the second molars. In such cases the distal cusps of the maxillary molar were found impinging on the mesial cusps of the mandibular molar, suggesting that the maxillary tooth had moved forward along its shorter arc before the mandibular molar was ready for it in its forward position. The same degree of interproximal spacing was not found, possibly because some of the deciduous molars had been retained in these cases, or others replaced by their permanent predecessors before the extraction of the first permanent molars. If the deciduous molars are lost prematurely, the loss of their influence on the growth of the anteroposterior length of the alveolar segments must have an influence on the relative positions of the second permanent molars, but it is difficult to believe that, in those cases where they are present in full complement, the removal of the first permanent molar will, *per se*, cause a tilting of the second molars.

(3) *The Loss in Vertical Height.*—It was not found that there was any increase in the overbite amongst the children in the experimental group. Only one case was recorded where the incisal overlap was greater than the normal incisal third. In contrast six children in the control group had an incisal overlap greater than the incisal half.

The Parodontal Condition.—The gingival condition of the experimental group was assessed before the extractions. Children with marked gingivitis were those with non-detergent mouths, with nasal stenosis, "wrong swallow" or both. Local gingivitis due to loose deciduous teeth, etc., was discounted. Eleven children were considered to have had parodontal trouble before the extractions were done.

When the final assessment was taken, two children in the experimental group had localised gingivitis, and none had evidence of traumatic gingivitis due to the extractions. In the control group, 16 children had gingivitis of the mandibular and maxillary incisor teeth, apparently due to the imbrication because only two cases had nasal stenosis and four a "wrong swallow." Twelve others had localised gingivitis in the premolar regions distal to outstanding canines. Generally the oral condition of the experimental group was superior to that of the control group.

(4) *Clinical Age.*—It soon became obvious, as the children of the experimental group were periodically examined during the course of the investigation, that, because such clinical signs as could be looked for are very largely problems of eruption, there is no age determinable by such signs which could be said to be that at which the four first molars could be removed with consistently good results. Unfortunately few developmental cycles are more variable. The suggestion has been made that the best age can be said to be when the first premolars are erupted and in occlusion. It was impossible to verify this because frequently one or more of the second premolars had erupted before the first premolar, and in a few cases the second molar had erupted before either of them. Such variation in the only clinical signs available obviously makes it impossible to recommend a dental age at which the teeth can be removed safely and with consistently good results. Moreover, as the years passed, it became more and more apparent that it was impossible to leave the teeth to move into good occlusion on their own without any help from an orthodontic appliance. A workable occlusion occurred in the majority of the cases treated, but it is debatable whether the adult parodontal condition may not prove to be as poor as that commonly found in an overcrowded mouth.

Summary

The findings of the result of an investigation into the removal of the four six-year molars bear out the statement that there is a reduction in the incidence of decay and that the general parodontal condition is improved. The loss of occlusal contact, and the variable and unpredictable movement of the teeth without control by an appliance, make it impossible to recommend removal of these teeth as a routine in an attempt to produce thereby the perfect dentition. A further factor against such a course of treatment, without the strictest safeguards and control, such as those advised by Wilkinson in his original article, is the frequency with which one or more

teeth may be missing from the dentition. During the study of the bite-wing films taken for the assessment of occlusal contact, the prevalence of cases in which one or more of the second premolars were absent was noticed. In consequence an examination of nearly 400 films, taken for orthodontic purposes, was made. Of these, 12·4 per cent showed that one or more of the second premolars were absent. When these figures were reassessed in relation to the number of children of the same age-groups in the district, the percentage figure became 5·4. If this percentage of the child population is already one or more teeth short of the full complement, it would appear to be unwise to advise the removal of the four first permanent molars as a routine, particularly as the third molars and upper lateral incisors are also frequently absent. The removal of these teeth is too often essential in the course of routine clinic treatment, and more harm is caused by the failure to remove the opposing tooth, than by extracting all four, but it is advisable to consider their removal, when this is essential, as part of an over-all orthodontic plan, and to guide the remaining teeth into position with an appliance, rather than to consider their extraction to be a complete treatment in itself.

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SHORT COMMUNICATIONS

ACETOMENAPHTHONE IN POST-OPERATIVE DENTAL HÆMORRHAGE

By N. P. HILTON, L.D.S.Glas.

In February 1949 Mr. H., aged 33, presented with 18 teeth in a carious condition which, owing to the pain he was having, demanded immediate extraction of several teeth, and the remainder as early as possible. Unfortunately this patient gave a history of post-operative dental hæmorrhage which had required hospital treatment with blood transfusion. After very careful examination I decided to extract a lower molar and plugged the socket with snake venom. The patient had to be seen for post-operative hæmorrhage several times, including the early hours of the morning, when further plugging with penicillin was done.

In consultation with his doctor, and after X-ray examination, two further extractions were done to relieve the pain and the patient put to bed. The sockets were plugged and the patient given palliative treatment, and a course of liver injections was then given to reduce the anæmia caused through the extractions and hæmorrhage.

The patient was away from work for several weeks, and three months were allowed to pass without further treatment, but owing to the dental pain a decision had to be made regarding further surgical interference, since a position had been reached where the patient, if staying away from work, was in danger of losing his job.

It was then, with his doctor, we decided to use tablets of acetomenaphthone—vitamin K—and four days before the extractions we prescribed these tablets in 10 mg. doses three times a day, and then did one or two extractions—plugging the sockets with penicillin cones. The extractions were completed at intervals with premedication of these tablets, and the results were outstanding. Little or no further hæmorrhage was experienced and no further time was lost from work.

I had recently a further case with a similar history to Mr. H. and prescribed tablets Acetomenaphthoni (BP) three times a day, but a multiple firm of chemists refused to supply the tablets on a National Health prescription because they are not included in the list of drugs we can prescribe. The patient was able to pay for the tablets so that the treatment could be continued but was very annoyed at having been made to do this in a large chemist's shop, and in front of other customers.

EXTENSIVE ENDOSTEAL OSTEOCLASTOMA OF THE LOWER JAW

By N. SALAMA, L.D.S.Eng., and AZIZ HILMY, L.D.S.Eng.
Dental School, Cairo

A female, Egyptian, aged 18, reported complaining of an unsightly swelling of the lower jaw, of five years' duration, which was gradually increasing

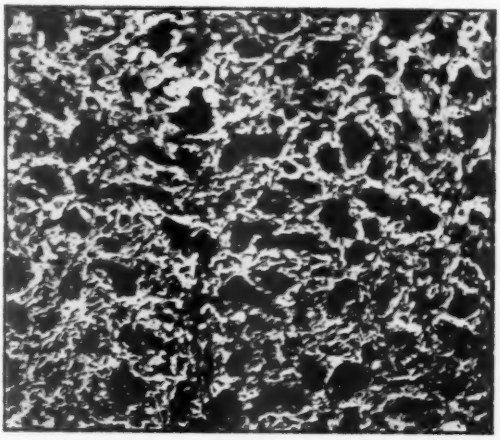
The patient, profile view.

in size. On examination, an extensive solid vascular growth was present, extending from the region of the lower left second molar to the right lower premolar region thus occupying nearly completely the whole lower jaw. The growth was of endosteal origin. Both plates of the mandible were expanded and in some places the bone had completely disappeared. There were, however, solid areas of calcified bone that could be felt on palpation. As consequences of the great deformity of the lower jaw, the tongue was pushed backwards and the lips forwards. The teeth in the regions involved were completely dislodged and some were so loose that they were removed. The growth had a sessile base and a slightly irregular nodular surface. The upper border of the neoplasm was ulcerated —due to traumatic bite of the upper teeth. There was no metastasis or other lesion in the long bones of limbs, so generalised osteitis fibrosa was excluded. The patient's general condition was good. Blood count was normal. Calcium level of blood was within normal limits. Wassermann reaction was negative.

Radiographic examination revealed the presence of a large endosteal tumour occupying the whole body of the mandible on both sides, giving rise to expansion of the mandible, the

Radiograph of left mandible.

major part of which was extended outwards with its contour intact. Much of the bone was eroded and several calcified islands of bone could be seen. The radiographic appearances of the bone were slightly suggestive of multilocular cyst, but there were no definite cystic cavities and therefore the growth was of a solid nature. Some of the teeth were seen to be embedded in the substance of the growth.



Photomicrograph of section of the tumour.

Microscopical examination revealed a typical picture of an endosteal osteoclastoma with numerous myeloplaxes containing multiple nuclei. The matrix was highly cellular with delicate connective tissue stroma. The surface of the growth was ulcerated and covered by epithelium similar to that of normal gum. The tissue was infiltrated with deep round-cell infiltration.

MALFORMATION OF AN UNERUPTED MAXILLARY THIRD MOLAR

By I. J. WILLIAMS, L.D.S.Eng.

The photograph (approximately × 3) is that of the upper left third molar. The patient, a female,

presented on 6.2.50 wearing a full upper denture which had been in use for the past seven years. She

had persistent neuralgia so radiographs were taken and the buried $\underline{|8}$ was removed under local anæsthesia. Its malformed appearance suggests that the pressure of the denture may have been the predisposing cause of the abnormal shape of the crown and roots.

Since its removal there has been no further symptoms of neuralgia.

I am indebted to Mr. G. G. Hamnett, M.A., for the excellent photograph.

Orthodontic Notes

The Rationale of Tooth Extraction in Orthodontic Therapy

A CHILD will often inherit large teeth and be of small bone structure, and if he had a jaw large enough to accommodate all the large teeth, it would be out of proportion with the rest of his face. Endocrine imbalance, rickets, congenital syphilis, and hypo- and hyperthyroidism are the better-known conditions that may inhibit normal growth, and later result in want of correlation between arch length and tooth size, the latter being affected much less by these same conditions. When there is not enough bone to accommodate all the teeth, the solution of the problem is one of the following : enlargement of the bone as a whole ; enlargement of the specific segment where the tooth is crowded out ; distal movement of anterior teeth ; labial movement of anterior teeth ; lateral expansion ; reduction of tooth substance. In any of the first five the teeth may be brought into line, but will only remain in satisfactory alignment as long as appliances are in place. If a result is to be permanent, the teeth must be embedded in supporting bone and there must be a definite relationship between the amount of tooth substance and the available bone. Jaws do not grow through the stimulus of the teeth. By the time the average child is seen by the orthodontist, the time when growth centres can be stimulated is past. It is possible to move upper molars and premolars distally to a certain extent but it is almost impossible to move lower molars and premolars in that direction ; even in the upper the possibility of their moving medially again is always present. The method of lengthening the arch is probably most often attempted, but it is not successful and should be attempted in the lower jaw only under very limited conditions, one of which is in Class II, Div. II, where the lower incisors have an exaggerated lingual-axial inclination which is maintained by a deep overbite. It is wishful thinking to attempt to get an ideal occlusion when dealing with inferior subnormal material. The only logical course left is to extract teeth.—FRANCIS A. HAUGH (1949) *Amer. J. Orth.*, **35**, 738.

Prophylactic Orthodontics

A NATION-WIDE programme of orthodontic treatment, though needed, is impossible, therefore more widespread application of preventive orthodontic procedures is recommended. To provide an effective prophylactic orthodontic service the dentist must make a careful examination which includes: (1) The occlusion, (2) the number of teeth, (3) taking bitewing films, (4) cognisance of the natural adjustments that take place in the positions and relations which some teeth assume at the time of eruption compared with the positions and relations they eventually establish, (5) watching development by means of serial casts.

The next stage is treatment : (1) Restore occlusal and proximal surfaces of deciduous and permanent teeth. (2) Extract deciduous teeth at the proper time. (3) Trim deciduous molars when necessary. (4) Use tongue depressors to correct lingual relation of upper to lower incisors when the condition is mild. (5) To release first permanent molars from impacted positions, thread brass ligature wire, gauge 23, between the impacted tooth and its neighbour and twist the free ends tightly. (6) Consider carefully the probable results of extracting deciduous or permanent teeth before recommending their removal. (7) Extract supernumerary teeth. (8) Expose crowns of permanent teeth that are retarded in eruption ; this usually follows. (9) Break all bad habits. (10) Use space retainers when observation shows a tendency for the space to close beyond " safe limits."

Maxillary first permanent molars move medially following premature loss of adjacent deciduous molars earlier and to a greater extent than do lower first permanent molars. There is less " leeway " in the maxillary arch so this suggests early loss of an upper deciduous molar is more likely to be attended by complications than that of lower deciduous molars.—WEBER, F. N. (1949) *Amer. J. Orthodont.*, **35**, 611.

The Amalgam-Bar Space Maintainer

In 1944 Wesoke[1] described a simple bar type of space maintainer which is easy to make and requires no special apparatus. Its function is to replace upper or lower first or second deciduous molars. The bar is held in amalgam placed in a cavity in the tooth approximal to the space so that if a first permanent molar is used it must have erupted and require restoration to its medial surface ; the same applies to the other abutment. The amalgam is subject to occasional fracture of the marginal ridge under excessive stress but repair is simple. If there is no caries, it is better to use another type of space maintainer.

A piece of 18 gauge stainless steel round wire is used. Amalgam fillings are placed in the approximal surfaces of the teeth adjacent to the space. At the next visit a groove, large enough to accommodate the 18 gauge wire loosely, is cut on the approximal surfaces which extend to below the contact area ; these are undercut to contain new amalgam. The wire fits snugly between the grooves in the two teeth ; the distal end is notched for retention, the other end is a rounded point which will be semi-fixed ; both ends may be pointed if the occlusion is forceful. Two coats of cavity varnish or shellac are placed on the pointed end or ends of the wire to prevent cohesion with the amalgam. When the restoration has been in the mouth some time the varnish will dissolve leaving the wire semi-fixed. The bar is placed in the grooves prepared for it and amalgam packed round it. If it is necessary to remove the bar it is simple to cut it in the middle with a disc and remove the two pieces. The restoration can easily be repaired. The bar may be made to occlude with the opposing teeth.—MASSLER, M., and FRANKEL, J. L. (1950) *J. Amer. dent. Assn.*, **40**, 457.

[1] WESOKE, PHILLIP (1944) A Simple and Effective Space Maintainer, *J. Den. Children*, **11**, 48.

BRITISH DENTAL JOURNAL

JULY 21, 1950

A RETROGRADE STEP

SOCIAL Security legislation in the Isle of Man has, in the past, followed closely the precedents set in Great Britain, and the Health Service Act framed by the Tynwald was modelled on those enacted by the Parliament at Westminster. There are some minor differences in the administrative machinery in order to fit the British scheme to the needs of a small unit. Broadly, however, the benefits offered under the scheme are identical with those available under the English and Scottish Acts. On the dental side the Isle of Man Health Services Board adopted the scheme set out in the Regulations governing the General Dental Services in this country, together with the scale of fees laid down in those Regulations. They have also adopted the various changes which have been made here, from time to time, in the scale. Dentists in the Island have, therefore, been working under conditions similar to those applicable to their colleagues on the mainland. Eighteen months' experience of the working of the Act has shown that the cost, per head of the population, of the dental service was considerably greater, not only than the original estimate, but also than that of the corresponding service in Great Britain. Figures given in the Tynwald suggest that the demand rate for dental treatment under the Service reached a figure of approximately 40 per cent per annum of the total population. The cost of other parts of the Health Service had also been much greater than had been expected. The consequent strain on the finances of the Island has led to a series of stormy debates in the Tynwald, in which every aspect of the Service has been subject to close scrutiny. One of the results is that the Health Services Board has put forward a revised scheme of dental benefit in an endeavour to reduce the cost. This scheme has been promulgated by the Board without any prior consultation with the organised profession in the Island. Whether the Board took any other dental advice, we do not know, but the plan is an improvisation which bears every evidence of being panic legislation designed with the sole object of effecting a reduction of the cost without any regard having been paid to the ultimate effect on the dental health of the population. That it will inevitably fail to produce the greatest possible return in terms of dental health for the money which will be expended under it is certain.

Broadly, the scheme is a rehash of that of dental benefit under the National Health Insurance Acts with the modifications that the patient's contribution to the cost is to be 10 instead of 50 per cent, and that its operation is not limited to insured persons. The cardinal fault is the exclusion from the scheme of children and adolescents who are receiving full-time instruction in schools. If there was any assurance that adequate provision had been made for the treatment of this important section of the community, otherwise than under the General Dental Service, it would be possible to argue that this was no more than an effort to avoid duplication. We very much doubt, however, whether the school dental services of the Island are of so comprehensive a nature as to make it unnecessary for them to be supplemented by the work of private practitioners. Whether or not this assumption is correct, it is certainly in the best interests of the children that their parents should have the widest possible measure of freedom to choose the dentist by whom their children are to be treated. It is, moreover, desirable that dentists in private practice should be encouraged to take some part in this all important aspect of dental practice. It is hardly conceivable that this patched up scheme will not lead to the treatment of young people being postponed until such time as they are eligible for treatment under the Act, a result which would be the very negation of all sound practice.

If those in authority in the Island decided that it was impossible for them to meet the cost of a full service on the English model, they would have been well advised to scrap the whole scheme and institute a more modest one based on sound professional advice as to how to secure the best results from the expenditure which they felt able to afford. Such a scheme would have concentrated effort on the younger generation, not excluded them, and gradually extended its benefits to older members of the community, who had already been rendered

dentally fit in their adolescent years. As it is, the scheme offers little or no hope of reducing the incidence of dental disease.

It appears also to be inevitable that the reduction in the items of treatment which may be provided in the service will restrict still further the clinical freedom of dentists to provide the highest standards of treatment for their patients. Some of the latter will, almost certainly, elect to be treated privately, rather than be subjected to the restrictions inherent in the plan. Others, however, may well resent having to pay for such things as inlays and metal dentures, and be inclined to visit their discontent on the dentist rather than on the Health Services Board.

This is a thoroughly retrograde scheme without a single redeeming feature. Dictated, presumably, by financial stringency, it almost goes out of its way to ensure that the money which will be expended under it will produce the least possible return in terms of the dental well being of the population and the greatest possible measure of resentment in those who work under it.

NOTES AND COMMENTS

The Annual Meeting

THE Annual Meeting of the Association held last week in the University of Birmingham will long stand out as a landmark in the history of the Association as being the first to be held under the new constitution, and the Organising Committee of the Central Counties Branch are to be congratulated upon the success which attended their efforts to make the meeting worthy of the occasion, both on the scientific and social sides. From the first the programme went without a hitch although there was inevitably some disappointment because the large attendance made it impossible in the case of some of the social functions to accommodate all those members who wished to be present.

As it was, the seating capacity of the magnificent Great Hall of the University was taxed to the utmost by the 500 members and guests who were present at the Annual Dinner. The ample accommodation for the meeting which was placed at the disposal of the Association in the main building of the University and the modern adjacent Medical School made Birmingham an almost ideal venue for a large meeting, and the committees responsible for the detailed arrangements had obviously been at great pains to make the maximum use of those facilities so as to ensure the comfort and convenience of all those who took part in the meeting. Particular mention should be made of the excellent arrangements made by the Transport Committee for the conveyance of members to and from the University and the centre of the City. This was indeed a memorable meeting.

Presentations at the Annual Meeting

A VERY pleasant feature of the Annual Meeting was a series of presentations to the Association. That made by Dr. James Knott, on behalf of himself and the other members of the family of the late Mr. W. Malcolm Knott as a commemoration of the latter's occupancy of the Presidential chair when the Association last met in Birmingham in 1929, took the form of a cheque which is to be utilised to purchase a loving cup to be used at future Annual Dinners of the Association. This will become a treasured part of the possessions of the Association recalling to many the work and personality of an outstanding member of the profession. The formal presentation to the Association of the badges of office of the President of the Incorporated Dental Society and the Chairman of the Public Dental Association was a fitting emblem of the accomplishment of Amalgamation. It was particularly appropriate that the presentation of the I.D.S. badge should have been made by Mr. W. S. Crowthers by whom it was first presented to that organisation. Another link with the past, a gavel fashioned from the wainscoting of the consulting room of Sir Charles Tomes, presented by Professor Bradlaw, places in the possession of the Association, an apt symbol of its early history which, it is safe to predict, will be increasingly treasured as the years go by. The final presentation by the All-India Dental Association of two beautiful examples of Indian work was an illustration of the closeness of the ties which unite the dental organisations of the Commonwealth.

Honorary Members

AT the recent Annual Meeting the small list of Honorary Members of the Association had added to it the names of two distinguished men who are not members of the dental profession. Both are well known to the profession, Sir Cecil Wakeley is President of the Royal College of Surgeons and has done much to further the well-being of the Faculty of Dental Surgery of the College; he has for many years been keenly interested in promoting dental science. Of Mr. Hugh Linstead it is sufficient to say that as chairman of the Amalgamation Drafting Committee he did much to secure the adoption of the scheme which led to the ultimate amalgamation of the three organisations into the Association of which he has now been made an Honorary Member.

An Historical Souvenir

THE occasion of the first Annual Meeting of the reconstituted British Dental Association was marked by the publication of an attractive souvenir programme containing short histories of each of the three organisations which had been merged into one Association. This is profusely illustrated by photographs of the officers and officials of each of the organisations and others of historical interest. This was sold at the meeting, the whole of the proceeds going to the Benevolent Fund of the Association. It is thought that many members who were not present at the meeting would be glad to assist the Benevolent Fund by purchasing a copy of this interesting souvenir. Applications for copies accompanied by a remittance of 2s. 6d. should be addressed to the Secretary, British Dental Association, 13, Hill Street, Berkeley Square, London, W.1. The sum received will be added to the £122 10s. realised by the sales of the programme at the meeting.

British Standard for pH Scale

THE degree of acidity or alkalinity of solutions can only be measured accurately in terms of hydrogen-ion concentration which for the purposes of convenience is expressed in terms of the symbol pH. A neutral solution is said to have a pH of 7. To some extent the definition of pH is an arbitrary one and it has been realised for some time that different workers were using different standards. The British Standards Institution, as a result of a suggestion by the Royal Society, have now proposed the universal use of a standard based upon the pH of potassium hydrogen phthalate at standard temperature which has recently been determined by workers in the United States. In addition to this primary standard six secondary standards at suitable intervals in the pH range have been established and others will be added to the list in due course. Since a great deal of biochemical research into dental problems, in which the measurement of pH plays an important part, is being carried out all over the world, the adoption of this standard is very timely. Reference to it will ensure that, when different workers refer to a value of pH, they mean the same thing within $\pm$ 0·005.

Dental Nurses in America

A NUMBER of women are at present undergoing a two-years' course of training at the Forsyth Dental Infirmary to prepare them "to fill cavities in children's teeth under the supervision of a registered dentist." This scheme has been authorised under a special law passed by the Massachusetts legislature last year. The operation of this law is limited to a period of five years—it being designated as a "special programme of dental research." The American Dental Association and the American Association of Dental Schools are opposed to the scheme, and the House of Delegates of the Massachusetts Dental Society has decided, by 45 votes to 27, also to oppose it. A Bill to repeal the enabling legislation has been introduced into the Massachusetts legislature. What measure of success will attend this move remains to be seen.

Fifty Years Ago

From the "Journal of the British Dental Association," July 16, 1900.

I do not believe that the cleverest operator can treadle his engine whilst operating without giving some swaying motion to the body, and consequently to both hands. Continuous practice certainly gives great command over the body whilst treadling, but every bit of progress towards perfection in this matter adds inordinately to muscle strain and consequently to ensuing fatigue. But even the most expert will to some extent lose perfection as a heavy day's work progresses, and fatigue begins to make itself apparent. The operating stool alone enables one to preserve a greater control over the swaying motion produced by treadling; but the electric motor in conjunction with the stool abolishes all motion, and enables one to work most delicately with ease and comfort.

From a paper by C. S. Reed.

LETTERS TO THE EDITOR

A MODIFIED DESIGN FOR A HIGH-LABIAL RETAINER FOR KENNEDY CLASS I AND II CASES

SIR,—Absence on holiday prevented me from dealing sooner with the points raised in Mr. Wallis' letter in the issue of June 16. The retainer which I suggested is so obviously a direct one that I did not think it required emphasising; the discussion of the function and mechanics of the indirect retainer thus never arose.

As to the position of the fulcrum, your correspondent is, of course, quite correct: it is, in the cases under discussion, near the occlusal rest—again a point which does not need stressing. Now then, if he cares to refer back to my figs. 1 and 2, he will notice that they are purely and simply diagrammatic, as mentioned in their annotations, and are only meant to show what happens to the end of the retainer when the free end of the saddle tips away from the gingiva, viz. the tip of the retainer tends to describe an arc in a mesial, gingival and finally distal direction (see arrows). The suggested modification is merely intended to eliminate that final distal swing of the arc by bringing the end of the retainer to an elastic stop against the biggest bulge of the abutment tooth.

This seems to be more reasonable than the traditional design, where the tip of the retainer is allowed to move through the complete arc before it comes to a stop at the distal end of the arc, if it ever gets that far, as by then the free end of the saddle will have already dropped; besides, the modified retainer is so much more inconspicuous.

107, *Deansbrook Road*,
Edgware, Middx.

Yours faithfully,
K. STRAUSS.

THE PILTDOWN SKULL

SIR,—In reply to Mr. P. H. Staple, my claim that "Piltdown Man lived nearer to the end than to the beginning of the Third Interglacial Period with the possibility that he may have been post-glacial man," was based on evidence quite independent of the fluorine estimation test—evidence given in detail in my R.A.I. paper of June 14, 1949. That claim is supported by, but does not rest upon, the fluorine estimation test.

Is not Mr Staple overlooking the fact that Drs. K. P. Oakley and Randall C. Hoskins in their note in *Nature*, **165,** 379 (1950), included a list of Holocene (Recent) material in their list of analyses of fossil materials from Piltdown, page 381, and that the percentage fluorine content of the so-called Eoanthropus material and of this Holocene (Recent) material both fall within the same group, 0·1 to 0·4 per cent? This is the same ratio as exists between the Galley Hill remains and the Holocene (Recent) material from the Galley Hill district. On these figures it would appear that Mr. Staple's objection cannot be sustained.

I would make it clear that in this matter of the fluorine estimation test I have done no work whatever save only to comment intelligently on the published data, and this shows that the fluorine content of the Piltdown skull and mandible is of the same low percentage as that of the Piltdown Holocene (Recent) material.

In reply to Mr. R. J. Hart, it may be confidently expected that if a second article which has been submitted to the BRITISH DENTAL JOURNAL entitled "The Piltdown Mandible and Canine Tooth. Reasons why they could not belong to Piltdown Man" is published, his doubts will be removed. The claim that the isolated molar tooth found two miles away from Piltdown was identical with the molar teeth of the type specimen has been dealt with. The two molar teeth in the type specimen are shown to be as truly apelike as teeth in an ape jaw, and the wear on them is to be associated with a flat anthropoid type of temporomandibular joint and the restraint on outward lateral movement imposed by long canine teeth. The isolated molar, however, is a human tooth, showing by its wear association with the human type of temporomandibular joint, unrestricted lateral movement, and the human parabolic dental arch. Smith Woodward rightly recognised it as a human tooth, and wrongly ascribed the mandible and its teeth to man.

74, *South Side*, Yours faithfully,
Clapham Common, S.W.4. A. T. MARSTON.

CHEWING OF ANTLERS BY DEER

SIR,—My short note on the chewing of stags' antlers has brought me two interesting letters from Mr. G. Kenneth Whitehead, The Old House, Withnell Fold, Chorley, Lancs, and I thought the following excerpts from those letters would be of interest to others :

" I was very interested to read in the BRITISH DENTAL JOURNAL your note concerning the chewing of antlers by deer.

" I must mention to start with that I am not a dentist and have no knowledge whatsoever in the matter but my own dentist, knowing I have made a close study of deer, sent me your cutting.

" I would confirm that deer, both stags and hinds, normally chew the antlers during the summer months, particularly in May and June, but I am of the impression that they do this mainly because they only find a *freshly* cast antler palatable. Wild red deer normally cast antlers April (old stags) to late May (young stags). I have never seen deer chewing cast antlers in the winter months but deer have been seen chewing the living antler of a stag lying down before the antlers were cast ! The idea suggested, that they only chew during the summer because they have so many leisure hours, is quite inadmissible because it has been noted that stags confined in an enclosure at the Zoo will not eat antlers at all although the late Mr. Pocock left them purposely in the enclosures to see if they would.

" Can it be, therefore, that a freshly-cast antler has some chemical property that is lost through ageing, i.e. by evaporation, and that deer, artificially fed in an enclosure, receive this commodity in their artificial rations thus making it unnecessary for them to chew antlers ?

" As you say, red deer seem to chew antlers more than any other species and I cannot remember ever having seen fallow deer doing it. Rabbits and other rodents are, of course, notable antler gnawers and often antlers, supposedly chewed by deer, have in fact been chewed by these smaller rodents.

" A friend of mine regularly puts out on his deer forest bones from dead horses, cattle, etc., obtained from the local abattoir and which are, apparently, enjoyed by the deer during summer months. There would, therefore, definitely appear to be some connection with the period of the year when they desire this form of diet and, despite the fact that it happens to be at a time when food is plentiful, I feel they do it to make up for some deficiency in their diet.

" I believe the carcase of a stag—bones only—weighs approximately 50–60 lb. and during the period of antler growth, a good adult stag has *annually* to grow a fifth of this weight. This is a considerable growth in three and a half months when compared with the total weight of bone grown by a mature stag which takes six years."

It is just precisely the extraordinary fact, mentioned by Mr. Whitehead, that every year stags grow a structure made almost entirely of calcium in about four months, equal to one-fifth of the weight of their skeleton, that makes me wonder where on earth they get the calcium from. Actually, the wastage of calcium into the body is considerable but even if they used every scrap it would still seem impossible for them to get enough.

Yours faithfully,
E. WILFRED FISH.

EARLIER ERUPTION OF TEETH

SIR,—It is commonplace today to see children of 8 or 9 years of age erupting one or more premolars. Since the beginning of the year I have noted four girls erupting the second permanent molars at 10 years of age.

I consider the early eruption of permanent teeth one factor in a general growth cycle.

It is noteworthy that these children are, in the main, girls, who exhibit an early physical and mental development, they are so to speak "old for their years."

In each case there is a history of early eruption of the deciduous teeth.

This clinical picture can be correlated with another important fact, that in the second part of the cycle pathological changes in the dental and oral tissues occur early.

Parodontal disease, often with advanced bone loss, can be seen with increasing frequency in young people, and, strangely enough, more commonly in young women.

In endeavouring to find the ætiological factors concerned one turns to the endocrine system.

Man is the product of his endocrines. Our endocrine secretions determine our growth *including the growth of our teeth.*

Endocrine dysfunction produces pathological conditions in the body *including the dental and oral tissues.*

Endocrine dysfunction occurs more readily and more frequently in women than in men.

Certain ulcerative conditions of the mucous membrane and parodontal conditions found in young women are endocrine in origin. More and more evidence is now being produced to show that these conditions can be remedied by the administration of endocrines, which, by correcting an endocrine imbalance, can restore the tissues to normal.

My hypothesis then is this:

The early eruption of the permanent teeth is due to the early function of endocrine growth factors. This we know occurs earlier in girls than in boys. Early endocrine function produces earlier general development and can predispose to earlier dysfunction producing pathological conditions, which may manifest themselves in the dental and oral tissues.

67, *Rodney Street*, *Liverpool*, 1.

Yours faithfully,
JOSEPH ANGELMAN.

Reviews and Abstracts

ENDODONTIA. By Bernard Gottlieb, M.D. (University of Vienna), D.M.D. Hon. (University of Bonn), LL.D. Hon. (Loyola University, Chicago) ; Seth Lee Barron, D.D.S. ; J. Hobson Crook, D.D.S. Henry Kimpton, 1950. Pp. 177. Illustrations 103. Price 42s.

In common with all publications in which Gottlieb's name appears, this little book describes in simple straightforward language the conclusions which have been reached as a direct result of long painstaking research.

It is a sad thought that this book marks the end of all that Gottlieb had done for dentistry, for he died a few months ago, but he has left behind him a lifetime of research, which has been of immense value to dental science. Let us hope that his collaborators in this book will carry on his great work in the true traditions of the master.

The book is fascinating because each stage in the treatment of the root canal has been built up by a series of experiments on dogs, carried out for a number of years, and when a particular mode of treatment is prescribed, it is because experimental work has shown conclusively that that method is the best.

The authors believe in the importance of using sterile dentine powder mixed with sulfathiazole paste for root filling for the excellent reason that this mixture has been shown to be resorbable and that it stimulates the production of cementoblasts. Many of the photomicrographs in fact show the sealing of the apical foramen of root filled teeth with cementum, which must represent the perfect result of root canal therapy.

Such results prove conclusively that it is possible to render a pulpless tooth as harmless to the patient as a vital one, always providing that it is treated with meticulous care and skill. One wonders, however, whether the ordinary practitioner, working in a busy practice, can achieve such results, or whether such work should be left in the hands of the specialist, who has the time, patience and skill to bring such work to a successful conclusion.

It is perhaps surprising that no mention is made in this book of the fact that all exposed pulps are infected in the pulp chamber whilst the rest of the pulp remains uninfected, and that ordinary root canal technique involves the risk of pushing this infection into the apical third of the root, where bacteria can live and multiply.

It is also surprising that the authors advocate the curettage of the root apex rather than apicectomy. Apart from the difficulty of removing all the infected debris from around the apex, there still remains the apical third of the root consisting of numerous lateral canals leading into the peri-apical area, which offer a medium for further bacterial growth. There have been too many successful results from the operation of apicectomy to condemn it on the grounds that the amputation opens up areas of dentine which may be infected.

This book however is a serious attempt to put the science of endodontia on to a sound biological basis, and it must be read by every dentist who seriously undertakes to work in this most exacting branch of dental surgery.

The Hydrogen-ion Concentration of the Saliva.—Before commencing a study of the effect of general metabolic changes upon the hydrogen-ion concentration of saliva it was necessary to establish a method of determining salivary pH with accuracy. The Stadie microglass electrode was chosen because its small size would make possible direct measurement in the mouth and so avoid errors due to carbon dioxide loss and temperature variation. The electrode was modified so that by siphon action or suction there was a constant flow of saliva around it. Readings with the Cambridge pH meter were made at one minute intervals six times daily over a period of two weeks. The hydrogen-ion concentration of the saliva was remarkably constant, the range during the whole of the experimental period being between 6·46 and 7·00. There was some evidence of a very slight fall in hydrogen-ion concentration with increased rates of salivary flow. A second series of experiments was planned to determine the effect on salivary pH of substances known to alter the plasma alkali reserve, using ammonium chloride in 5 grm. doses as the acidifying agent and sodium bicarbonate in 10 grm. doses as the alkalinising agent. The venous plasma bicarbonate content was estimated with the Van Slyke volumetric apparatus at the same time as the salivary pH. Large changes occurred in the alkali reserve but the accompanying changes in the hydrogen-ion concentration of the saliva were

negligible and only just outside the experimental error of the measuring method. All these experiments, however, were carried out in a single subject and it is possible that drugs influencing the alkali reserve might have a more profound effect in other subjects.—ANDERSON, D. J. (1949) *J. dent. Res.*, **28,** 583.

A Simple and Rapid Technique for Restoring the Fractured Young Incisor.—A fractured upper central incisor may be temporarily restored until a jacket crown is indicated. A crystal clear acrylic crown form is selected and trimmed at the gingivæ to allow it to be seated on the fractured tooth. The proximal surfaces having been disced with a diamond instrument, the tooth is isolated, dried and varnished. The correct shade of a self-curing resin is selected and the material mixed for about 30 seconds until it appears soft and plastic. The soft-mix is placed in the prepared crown form which is then seated on the fractured teeth. Polymerisation of the material, resulting in its union with the acrylic crown form, occurs in about fifteen minutes, when the excess is removed. Sufficient density is produced by the pressure of the crown form against the teeth. The procedure of allowing the material to stand for three or four minutes before use is not recommended in this instance because the rubbery consistency of the mass might distort the crown form while being seated on the teeth.—KELSTEN, L. B. (1950) *J. Amer. dent. Ass.*, **40,** 455.

THE HEALTH SERVICE

CENTRAL HEALTH SERVICES COUNCIL

THE Minister of Health has made the following appointments : To the Central Health Services Council—J. Lauer, L.D.S.Eng. (until March 31, 1953) ; Professor R. V. Bradlaw, *C.B.E.*, M.D.S., F.R.C.S.Eng., F.D.S. R.C.S.Eng. (until March 31, 1951). To the Standing Dental Advisory Committee—Mr. J. Lauer (until March 31, 1953) ; Mr. C. V. Armitage F.D.S. R.C.S.Eng. (until March 31, 1951).

TREATMENT OF MERCHANT SEAMAN

IN reply to a question in the House of Commons the Minister of Health said on July 6, that he hoped shortly to announce arrangements to help British seamen to obtain dental treatment. Mr. Awbery referred to a complaint from a seaman who, unable to have his dentures repaired in port, had to go on a voyage for twelve months without dentures.

The Minister said that he was hoping to make arrangements to obviate this in future and that his announcement would be made very shortly.

A few days subsequently the Ministry issued a memorandum (E.C.N. 57) to Executive Councils in which the special arrangements which had been made to facilitate the treatment of merchant seamen were set out. Copies of this memorandum are being sent to all dentists in the General Dental Service. The main provisions are:

(1) Form E.C.17 should be prepared and completed in the usual way.

(2) The dentist should insert in Part 9 of the form the words "Merchant seaman to sea" followed by the approximate date of return to sea (e.g. 20.7.50) and, if known, the name of the ship (e.g. S.S. *Rosemary*).

(3) The form should be dispatched immediately to the Dental Estimates Board for approval.

(4) The dentist should proceed with the treatment forthwith without waiting for prior approval. (If, following the receipt of the estimate despatched in this way, the Board felt that some enquiry was necessary, they would get in touch urgently with the dentist and would, following the enquiry, advise him whether it was necessary to discontinue treatment.)

(5) The Board will (unless after enquiry some difficulty is apparent) return the estimate authorised in the usual way. The dentist should then have the remaining parts completed and send the form to the Board, for authorisation of payment in the usual way. The dentist will, of course, normally obtain the patient's signature to Part 4; but if, owing to the shortness of the seaman's stay, the form is not returned to the dentist before the treatment is, in fact, completed, the dentist himself should endorse Part 4 under his own signature with the words "Seaman returned to sea (20.7.50)" before returning the form to the Board for authorisation of payment.

Dentists will be able to identify British merchant seamen by asking them to produce a British seamen's identity card (B.S.I.C.), which contains the photograph of the seaman and certain other details not contained in the ordinary civilian identity card.

Dental News

ANNUAL GENERAL MEETING OF THE BRITISH DENTAL ASSOCIATION

THE Annual General Meeting of the Association was held in the Great Hall of the University, Birmingham, on Tuesday, July 11, at 11 a.m.

The Retiring President, Mr. J. M. Macrae, occupied the Chair.

OFFICIAL WELCOME BY THE LORD MAYOR OF BIRMINGHAM

A communication was read from the Lord Mayor of Birmingham, who wrote that he was extremely sorry that it was impossible for him to be present to extend a welcome in person to the members attending the Birmingham Conference ; the time for which the Annual General Meeting had been fixed clashed with the opening of the Birmingham Assizes, when it was the duty of the Lord Mayor to wait upon His Majesty's Judges. He asked the President to be kind enough to convey a warm welcome to all those attending the meeting.

LOYAL MESSAGE

The Conference unanimously agreed that the following Loyal Message should be sent to His Majesty the King :

" The members of the British Dental Association in general meeting assembled offer to their Patron, His Majesty the King, their humble devotion and loyal greetings on the occasion of this, their seventieth Annual Meeting. J. M. Macrae, President."

VALEDICTORY ADDRESS

Mr. J. M. Macrae then delivered his Valedictory Address.[1]

[1] Printed as an Original Communication on p. 32 of this issue.

Induction of the President, Mr. H. T. Roper-Hall

The Retiring President then installed Mr. H. T. Roper-Hall as President of the Association. Mr. Roper-Hall, he said, was a man whose personal and professional qualifications merited the high honour bestowed upon him, and on behalf of all the members of the Association he wished him a very happy year of office. (*Applause.*)

Mr. H. T. Roper-Hall then took the Chair as President, and said that it gave him the greatest possible pleasure to hand to Mr. Macrae a replica of the badge which he had worn so well during his year of office. (*Applause.*)

Vote of Thanks to the Retiring President

Mr. W. S. Brittan said that two years ago, at Liverpool, the Yorkshire Branch invited the Association to hold its next Annual Meeting in Scarborough and submitted the name of John Munro Macrae as a suitable person to become in due course President of the Association. They put forward Mr. Macrae's name with every confidence, knowing the worth of the man and the work which he had done for the Association.

Mr. Brittan said that it was now his duty to propose a vote of thanks to Mr. Macrae for his Valedictory Address, but he felt that he would be failing in his duty if he did not at the same time offer the thanks of the meeting and of the membership generally for the dignity and charm with which he had carried out his duties throughout what had been a most momentous year in the history of the Association. The members would also wish to thank the gracious lady to whom Mr. Macrae owed so much, his wife. The members of the Branches which the President and Mrs. Macrae had visited would have had an opportunity of appreciating the gracious charm with which Mrs. Macrae had carried out the various duties which had fallen to her.

It was with confidence and pleasure, therefore, that he proposed that a most sincere and hearty vote of thanks be recorded to the Retiring President for his Valedictory Address, and to the Retiring President and Mrs. Macrae for all the services which they had rendered to the Association.

The motion was carried unanimously, with acclamation.

The President's Inaugural Address

The President said he deeply appreciated the great honour which the Association had done him in placing him in the Chair. Before giving his Inaugural Address he wished to say a personal word which it was appropriate should be said at this, the first meeting of the new British Dental Association.

The old British Dental Association had been kind enough to make him President-Elect. When the amalgamation took place, there were in important offices in the other two organisations two gentlemen of high repute in their profession, Mr. R. Morgan, who was President of the Incorporated Dental Society, and Mr. C. V. Armitage, Chairman of the Public Dental Service Association. He would like to include with them the two gentlemen who had received the honour of being made President-Elect and Chairman-Elect respectively of these two organisations. It was with considerable pride and much gratitude that he recorded his appreciation of the fact that all those gentlemen, who had an equal right with himself to be considered for the Chair of the new Association, withdrew any claim and supported his election. (*Applause.*)

The President then delivered his Inaugural Address.[1]

Vote of Thanks to the President for His Address

Mr. Norman Haines, who proposed a vote of thanks to the President for his Inaugural Address, said he felt sure that when the President came to visit the Branches he would have a very happy time, and all the members would look forward to seeing him, because, since he had visited New Zealand on a special mission, they would expect something of unusual interest from him.

The vote of thanks was carried unanimously, with acclamation.

The Benevolent Fund

The President said that he had promised Mr. Dowsett, the President-Elect, to say something about the Benevolent Fund. The Benevolent Fund was very close indeed to their hearts, and Mr. Dowsett would welcome it if members would give a little thought to what they could do for the Fund and would put their name at the foot of a cheque and send it to him regularly. It would be better still if they would sign a covenant to subscribe for a period of seven years, in which case the Fund could recover the income tax paid on the amount of the subscription. It was pathetic to think that the Benevolent Fund had to depend on the regular subscriptions of only 13 per cent of the membership.

Reception of Visitors

The Secretary announced that there were present at the Annual Meeting some very distinguished visitors from overseas, many of whom had already arrived, while others were to follow later. He then introduced them to the meeting, and they were greeted with applause. From the United States of America there had come Admiral Bruce Forsyth; Professor Cahn, of Columbia University, and Dr. Harold Hillenbrand, who had not yet arrived. From Sweden there was Professor Lindblom, and from Australia Professor Amies, past-President of the Australian Dental Association. From Malta there was Professor Lapira, and from the All-India Dental Association Dr. Naval Dordi. From the Malayan Dental Association there was Mr. James W. Fox Taylor, and from Ireland Mr. Dan Gallivan.

Presentations to the Association

The President said that many members of the Association would recall with the greatest possible respect a former President from the Central Counties Branch, Mr. Malcolm Knott. Mr. Malcolm Knott's son, Dr. James Knott, was present and wished to make a presentation to the Association in memory of his father.

Dr. James Knott said that twenty-one years ago, in the hall in which the present meeting was being held, his father, Malcolm Knott, was inducted as President of the Association. To commemorate him and his year of office, which was generally considered to be a very successful one, his family wished to make a small gift to the Council of the Association for them to use as they thought proper. His father had been very proud of his profession and very zealous to support its dignity, and had been particularly fond of the Annual Dinner, with its pleasing

[1] Printed as an Original Communication on p. 29 of this issue.

mixture of formality, ritual and good fellowship. His family would suggest, therefore, that the money which they desired to present to the Association should be used to purchase a loving cup or a silver rose bowl, which could be passed round at the Annual Dinner and so preserve green the memory of Malcolm Knott and symbolise the dignity and brotherhood of the great profession which the Association represented. He would like to thank the President very sincerely for allowing this presentation to be made on such a memorable occasion. (*Applause.*)

The PRESIDENT, in receiving the gift, said that as one who had the profoundest affection and esteem for Dr. James Knott's father, he would like on behalf of the Association to thank the Knott family for their magnificent gift, which he would transmit to the Council to be used for the purpose which Dr. Knott had indicated.

Dr. NAVAL DORDI, of the All-India Dental Association, said that on behalf of the All-India Dental Association he would like to express his thanks for the cordial welcome which he and his wife had received, and to present to the British Dental Association two small, token gifts, not in return for their kind hospitality but merely as a reminder that a member of the All-India Dental Association had been present at the Annual Meeting in Birmingham. One of the gifts was a small tray, made in India, and the other was a dental badge embroidered in India—and Indian embroidery was very well known all over the world. (*Applause.*)

The PRESIDENT said that, on behalf of the Association, he would like to thank Dr. Dordi and the All-India Dental Association very sincerely for their splendid gesture of friendship, which typified the brotherly esteem which existed among all members of the dental profession. (*Applause.*)

It was within the knowledge of the Council, the President continued, that Professor Bradlaw wished to present to the Association a gavel made from wood from the consulting room of Sir Charles Tomes. He was sure it would be the wish of the Annual Meeting that that gift should be accepted. (*Applause.*)

Following the merging of the other two dental organisations in the new British Dental Association, Mr. W. S. Crowthers, a Past-President of the Incorporated Dental Society, and Mr. Armitage, who was Chairman of the Public Dental Service Association immediately before the amalgamation, wished to make presentations to the Association.

Mr. W. S. CROWTHERS said that this was for him a moment of proud memories and forgivable emotion. Mr. Macrae, the Retiring President, in a letter of welcome to the members of the two other organisations which now formed part of the British Dental Association, wrote " You will have traditions and accomplishments of which you will rightly be proud." Truer words were never written. His mind went back to the early days of the Incorporated Dental Society. It was a wonderful society; it had traditions and it had a goal, and, although the road had been difficult, the goal had now been reached. (*Applause.*)

There came a time in the history of the Society when that wise man, Mr. Bowen, after holding the Presidency for many years, retired, and he himself followed Mr. Bowen in the Chair. After his year of office was over, it was his great pleasure to induct into the Chair a very worthy man, Mr. Thomas Goodhugh, and at that meeting he produced, from " under the counter," as it were, a badge of office to be worn by succeeding Presidents of the I.D.S. In doing so, he used some words which might be regarded as prophetic, and the report in their Journal said :

> " The occasion of the induction of the new President was pleasantly marked by the surprise presentation to the Society by the Retiring President of a Presidential Collar and Badge, an exquisite example of the designer's art. This permanent insignia of office is the work of Miss Elizabeth Davies of Jarrow-on-Tyne, an artist and craftswoman of eminence.
>
> In installing the President, the donor expressed the hope that it would be worn by each successive President with the same pride with which he presented it, and as a symbol of the unshakable adherence to principle in all the Society's undertakings, and when at last the Society's tasks were fulfilled and a future generation of dentists was one brotherhood, a niche would be found for it somewhere where it would inspire kind memories of men who had achieved, at least something to deserve an honourable page in the history of a noble profession."

The honour of handing over the collar and badge to the President of the British Dental Association should belong by right to the last President of the Incorporated Dental Society, but Mr. Morgan, with characteristic kindness, had asked him, as the donor, to make the presentation, which he did in his own name and in the name of the now-absorbed Incorporated Dental Society, in the hope that it would find a niche which it would be agreed it deserved. (*Applause.*)

Mr. R. MORGAN, as the last President of the Incorporated Dental Society, said it gave him very great pleasure to see his old friend Mr. Crowthers have the honour of presenting the insignia to the Association, thus fulfilling the dream which he had when he first made the presentation to tne Incorporated Dental Society. Mr. Crowthers had worked all his life for a united profession, and had lived to see that morning the achievement of that dream. He must be a very happy man to find that his prophetic words, uttered so many years ago, had now come true. There were on the platform that morning six previous holders of the badge.

The PRESIDENT, in accepting the gift, thanked Mr. Crowthers very warmly for presenting to the Association the beautiful insignia which he gave to his old organisation so long ago, and which were now enclosed in a beautiful carved frame. The list of past-Presidents of the Incorporated Dental Society included many names of those who had " put dentistry on the map " in this country, and it was most interesting to know that, as Mr. Morgan had said, there were six people on the platform who had worn the badge. It was very fitting that Mr. Crowthers should have given it to his old organisation many years ago and to his new organisation that morning, and they thanked him very much. (*Applause.*)

Mr. C. V. ARMITAGE, as Chairman of the Public Dental Service Association at the time of the amalgamation, said it was his privilege to make a similar presentation, but unfortunately the badge of the P.D.S.A. was

not available at the moment for handing over, being still in the hands of the jeweller. In one sense its presentation was a matter of " rendering unto Cæsar the things that are Cæsar's," since the badge continued to be their property at the amalgamation, but it was fitting that the badge and collar of office of the P.D.S.A. should be handed over as an emblem of what that organisation had brought into the new British Dental Association. It was particularly appropriate that he should make that announcement to the new President of the British Dental Association, since it was only about six years since Mr. Roper-Hall occupied the Chair of the Public Dental Service Association. (*Applause.*)

ELECTION OF PRESIDENT-ELECT

Mr. W. PEEBLES said that it was his privilege to propose, that Mr. Ernest B. Dowsett, Honorary Treasurer of the Association, be elected President-Elect of the Association. It was right that in doing so he should mention some of the qualifications which fitted Mr. Dowsett to go on to hold the office which was the highest honour that the Association could bestow on any of its members. Mr. Dowsett might truly be denominated a son of the profession, since he still practised in the same house in which his father, a distinguished dental surgeon, had practised. He was educated at Guy's and rose to be Honorary Dental Surgeon of that hospital, and finally Consulting Dental Surgeon, a position which he held to-day. Most of his teaching had been done in that hospital, and there must be few students during the last forty years who had not blessed Dowsett's " Notes on Dental Surgery." When President of the Odontological Section of the Royal Society of Medicine in 1932, Mr. Dowsett gave a paper on the treatment of dental cysts which described what had become the recognised method of procedure in their removal.

In 1900 Mr. Dowsett joined the Medical Staff Voluntary Corps, and later the Royal Army Medical Corps, in which he served for nineteen years, reaching the rank of Colonel, and being awarded the *D.S.O.* for his services in the first world war. Mr. Peebles said that he had been told on good authority that Colonel Dowsett led Allenby's army into Jerusalem, a fact which he modestly denied.

Mr. Dowsett had been examiner in dental subjects to the University of Birmingham and to the Universities of Liverpool and Sheffield. He had served for seventeen years on the Board of Examinations of the University of London, and for many years was an examiner to the Royal College of Surgeons. He joined the British Dental Association fifty-one years ago, and in 1922 was elected President of the Metropolitan Branch. In 1924 he became Treasurer of the Dentists' Provident Society, serving as its Chairman from 1933 to 1944, when on his retirement he was presented with his portrait by that Society. On the death of Dr. Northcroft he became Treasurer of the Benevolent Fund, a position which he still occupied, and he was elected Treasurer of the Association in 1939. There was no need to emphasise the energy he had brought to the conduct of the financial affairs of the Association. During all those years he had been in active and busy practice, but hardly a day passed when he did not spend at least an hour or two at headquarters, looking after the interests of the members of the Association.

He was a man of the most profound vision, and no one sought his advice in vain, yet he was of the most modest and retiring disposition.

That was a very brief description of the qualifications of the distinguished member whom the Metropolitan Branch invited the Association to elect as President-Elect. At the same time, the Metropolitan Branch extended to the Association the invitation to hold the Annual Meeting in London next year, the year of the Diamond Jubilee of that Branch.

The motion was carried unanimously, with acclamation.

The PRESIDENT-ELECT (Mr. E. B. Dowsett) said that it was very difficult to follow in the footsteps of great men when suddenly called upon to do so. When he was first approached to allow his name to go forward he was forced to consider what he had done to deserve such an honour. The best that he could say for himself was that he had had a long experience. Most of his time had been spent in teaching the young, but he had been a member of the Association for a vast number of years and had served it in several capacities. It had given him great pleasure to act as Honorary Treasurer. He felt, therefore, that it was his seniority in the profession and the Association which had gained for him the great office which he trusted he would be able to fulfil. He thanked the members very sincerely for the way in which they had received the motion. (*Applause.*)

The meeting then terminated.

The Schools

AWARDS TO DENTAL STUDENTS

Dr. H. M. KING (Test) asked the Chancellor of the Exchequer how many students entered colleges in 1949 to study dentistry; how many dental scholarships were awarded in that year; and what steps were being taken to increase the number of dental schools at the universities.

Mr. Jay (Financial Secretary to the Treasury) replied that the intake of dental students in October, 1949, was 613. Awards to students were a matter for the Minister of Education and Secretary of State for Scotland, but he understood that their Departments offered 209 new awards in dentistry in 1949. In that year the total number of students holding awards by those Departments was 1,115. Awards to students were also made by local education authorities, but comparable figures of such awards in dentistry were not available. Measures for increasing the supply of dentists were under consideration by the Minister of Health and the University Grants Committee.

Mr. Jay said that he would examine Dr. King's suggestion that some portion of the money voted to the universities should be devoted to increased dental schools at the universities in view of the great demand for dentists.

Examination Results

University of Birmingham.—*Final B.D.S.*—*First Class Honours.*—J. R. Moore. *Second Class Honours.*—J. R. Grundy. *Final L.D.S.*—C. Needham, M. E. Terry.

University of Durham.—*Final B.D.S.*—*Second Class Honours.*—D. R. Bryson, O. Koranteng, H. A. Leigh, A. N. Naidoo. *Pass.*—I. W. Atchison, C. L. Carmichael, P. Dresser, F. B. Grainger, J. B. Masterton, R. E. Mather, J. M. Patel, J. F. Price, J. A. G. Wilson. *Final L.D.S.*—Irene S. Book, J. P. Brown, G. I. Dale, Anne E. Flisher, S. S. O. Olukotun-Williams, H. Stolarczyk, H. F. D. Van der Walt, M. Wealthall, A. Wilson, Jeanette A. Wilson.

University of Manchester.—*Final B.D.S.*—W. C. L. Bradshaw, R. C. Davies, J. H. Howarth, H. C. Loxley, G. E. Mayer, Dorothy R. Mills, J. R. Shaw, R. Timperley, Muriel M. Wilson. Satisfied the examiners at *L.D.S. Standard.*—B. T. Posner. *Final L.D.S.*—Pamela Andrew, E. Blasberg, D. Burke, A. M. Flett, J. A. L. Nelson, Pauline Sturgess.

Royal College of Surgeons of England.—*Final L.D.S.*—D. I. L. Albert, J. C. Bates, W. Bell, P. O. Bennett, M. Berstein, W. A. B. Brown, D. R. Burnapp, C. T. Chudgar, P. M. Cowper, H. G. de Jimenez, J. J. Dickens, A. E. Eden, C. G. Firth, W. H. Garland, P. E. Gerrard, H. D. Gupta, Veronica M. Heath, G. D. Hedley, B. A. Hill, V. G. Jones, R. Karat, A. J. Lane, Joyce M. Lennard, Krystyna Majewska, R. Marshall, C. W. R. Marston, E. D. Morgan, D. J. Murch, E. F. Peppler, H. W. Powell, A. B. Price, Marie Rodan, N. Sathasivam, G. E. Scott, Sylvia R. Segalov, A. I. Seymour, B. H. Smith, Doris E. Smith, B. M. Spalding, G. B. Summersgill, G. F. Thompson, Z. J. Tomiak, R. V. Warren, N. P. Webster, B. E. O. White, G. R. R. Whitehead, J. C. Williams, K. V. Williams, E. A. Woodger, J. L. Wynne, I. C. N. Young.

Royal College of Surgeons of Edinburgh.—*Final L.D.S.*—H. C. Anderson, I. A. Findlay, F. P. Heunis, G. H. Isenberg, V. M. Khosla, Miss C. Marsden, Miss M. MacVinish, J. B. Payne, H. L. Pearse, D. M. Renner, F. A. Townsend, R. Uchotski, C. I. Walter.

The Services

Territorial Efficiency Decoration.—The King has been graciously pleased to confer the award of "3 Clasps" to the Territorial Efficiency Decoration upon Lt.-Col. C. S. W. Sabine, *T.D.*, The West Yorkshire Regiment.

Personalia

M.Sc. in Orthodontics.—Mr. A. W. Eastwood, B.D.S.Lpool., has been granted the degree of M.Sc. by the University of Michigan. Mr. Eastwood was orthodontic assistant to Mr. H. G. Watkin at the Liverpool School of Dental Surgery before going to America. The subject of his Master's thesis was "Cephalometric Radiography."

Mr. Allan Maugham, L.D.S.Durh., has been appointed whole-time Dental Surgeon for the Plymouth Clinical Area, South Western Regional Hospital Board.

Obituary

HENRY JAMES MORRIS, L.D.S.Eng.

We regret to record that Mr. H. J. Morris died on June 26, after a brief illness. Born in 1875, Mr. Morris served his articles with Mr. C. Stokes of Sheffield before going to the Royal Dental Hospital. He qualified in 1897 and was elected a member of the B.D.A. in 1902. After qualifying he established a practice in his native town of Sheffield, this he carried on until he retired in 1945 when he went to live at Felixstowe. Always an active member of the Association, he was hon. secretary of the old North Midland Branch, 1915–1919, and in 1922 he was elected president of the Yorkshire Branch. He also served as hon. secretary of the Sheffield and District Society of Licentiates in Dental Surgery. In 1947 he was elected a life-member of the B.D.A.

Morris translated Fenchel's Metallurgy and contributed many articles to dental journals. The most important of these dealt with problems of mechanics, and it was appropriate that, being Demonstrator in Dental Mechanics at Sheffield University, he should be one of the first to realise the uses to which stainless steel could be put in dentistry. His later writings covered a wide range of subjects, and many will remember the facility with which he wrote humorous verse on all kinds of subjects.

A widely read man, he was equally at home in a variety of subjects and was always prepared to state his opinion in true English. His recreations were tennis, bowls, gardening and fishing. He was a Freemason and a Past Master of the White Rose of York Lodge. He leaves a widow and three sons.

THOMAS DILKS PAGE, L.D.S.Edin.

In the old Edinburgh Dental Hospital in Lawnston Lane in the last decade of the 19th century there was a happy spirit of comradeship and intimacy between the small band of students and their teachers—one of the guiding spirits among the students of those days was Thomas Dilks Page, whose upright character, efficient and skilled work made him *primus inter pares*. All through the course he took prizes and medals both in the dental and medical schools. In 1893 he passed the L.D.S. final.

He had been a pupil with Mr. C. F. Sutcliffe before entering the school.

Born in 1871 the son of T. A. Page, architect, Tom Page was educated at South Shields High School. He joined the B.D.A. in 1895 and was a member of the Northern Counties Branch from its foundation serving as hon. secretary and hon. treasurer, in 1911 he was elected president. He retired from practice in 1928 when he was appointed one of the early Regional Dental Officers. It was stated that the selection for this office was made on personality and character. Dilks Page combined these requirements with long experience of private practice. His high reputation for sound impartial judgment, understanding, tact and discretion served him well in this new venture, since the then new dental benefit demanded of the regional dental officer service all the qualities so eminently possessed by Page.

After a membership of the B.D.A. of 42 years he was elected a Life Member. At the time of his death in July 1950 he had been a member for 55 years.

He was a member and past president of the North of England Odontological Society. He was a good tennis and golf player, gardener, and above all an enthusiastic church worker and a friend in need—many were the deeds of kindness and unselfish help to others which were done unostentatiously. Always cheerful and full of life he was welcomed at all social meetings.

In his Valedictory Address to the Northern Counties Branch he said "let us take some part in shaping the road along which those who follow us will have to walk, not looking for our own good, but forgetting ourselves in looking out for others, counting our cause for everything, ourselves for nothing." This was the epitome of his life.

Roland Green, L.D.S. Eng., who formerly practised in Ealing, died on July 12, aged 71. He qualified in 1901 and was elected a member of the B.D.A. in 1904.

James Leonard Octavius Tilley, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng., late of 11 Bentinck Street, W.1, died in Somerset on July 11, after a long illness. He qualified in 1901 and became a member of the B.D.A. in 1914.

Death

PAGE.—On July 6, at Kent and Sussex Hospital, Tunbridge Wells, Thomas Dilks Page, L.D.S. R.C.S.Edin., aged 78, of Tunbridge Wells and formerly of South Shields.

Our Diary

Monday to Friday, July 24 to 28.

The British Dental Students' Association.—Annual Convention, Guy's Hospital, London, S.E.1. Tuesday: 10 a.m., "Some Chemical and Physical Properties of the Silicate Cements," F. N. Doubleday; 11.30 a.m., Film "Serial Study of Occlusion from Birth to Ten Years of Age," K. Pringle; 2.30 p.m., Annual General Meeting. Friday: 10 a.m., "A Study of Muscle Behaviour in Relation to some Orthodontic Problems," Dr. E. Gwynne Evans; 11.30 p.m., "Crime and the Dentist," Dr. Keith Simpson; 7 p.m., Annual Dance, Bridge House Hotel.